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SRB-IIID SOLID ROCKET BOOSTER PERFORMANCE PREDICTION PROGRAM

VOLUME III PROGRAMMERS MANUAL

Submitted To:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER

Science and Engineering Directorate

Under Contract NAS8-31644

Submitted By:

NORTHROP SERVICES, INC.

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SRB-IIID SOLID ROCKET BOOSTER
PERFORMANCE PREDICTION PROGRAM
VOLUME III -- PROGRAMMERS MANUAL

by

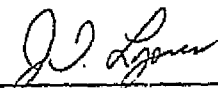
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SYSTEMS ANALYSIS AND INTEGRATION LABORATORY

Under Contract NAS8-31644

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HUNTSVILLE, ALABAMA

FOREWORD

This document presents work performed by Northrop Services, Inc., Huntsville, Alabama, while under contract to the Science and Engineering Directorate of Marshall Space Flight Center (NAS8-31644). This task was conducted in response to the requirements of Schedule Order 1.7.5, Amendment No. 1, Task No. 1. Mr. J. R. Redus, EL-24, is the Technical Coordinator.

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Section I

INTRODUCTION

This document is the Programmer's Manual for the Modified Solid Rocket Booster Performance Prediction Program (SRB-IIID) and is Volume III of a set of three volumes which describe the SRB-IIID model. Volume I contains the combined engineering description and users information manual and Volume II contains a sample case prediction.

The remaining sections of this document describe the major control routines of SRB-IIID, followed by a super index listing of the program and a cross-reference of the program variables.

Section II

SRB-IIID MAJOR CONTROL ROUTINES

The major subroutines which control the initialization and internal ballistics solution phases of the SRB-IIID program are briefly described in the following paragraphs. These subroutines are listed in the order of execution. A more complete description of the remaining program routines may be found in the footnoted reference.*

2.1 MAIN PROGRAM

The main program is the executive control routine for the SRB-IIID model (see Figure 2-1). The primary purpose of this main routine is to control the execution of multiple case simulations.

2.2 SUBROUTINE IBM

Subroutine IBM is the primary control routine for the internal ballistics module (see Figure 2-2). The first portion of this routine sets the values of certain program constants and zeroes module control parameters. Following this, subroutine INPT is called to read the IBM data (NAMELIST IBDATA) which has been previously stored on disk. Then subroutine MNCHN1 is called to initialize the sector geometry, check geometry constants and place increment dividing planes. If a contoured nozzle is being simulated, subroutine NSCE is called to calculate a nozzle correction factor. Finally, subroutine MNCHN4 is called to perform the time solution of the internal ballistics burn simulation.

2.3 SUBROUTINE INPT

Subroutine INPT reads the IBM data from disk under NAMELIST name IBDATA. This data includes motor case and propellant grain geometry factors; propellant properties and burning rate model parameters; non-steady flow, steady state and program time control parameters; nozzle parameters and geometry table parameters. This routine also checks for missing or incomplete sector geometry values and initializes the segment slot interfaces if a segmented motor is being simulated.

* Solid Propellant Rocket Motor Internal Ballistics Computer Program - Program Manual. Boeing Document D2-125286-1, February 28, 1967.

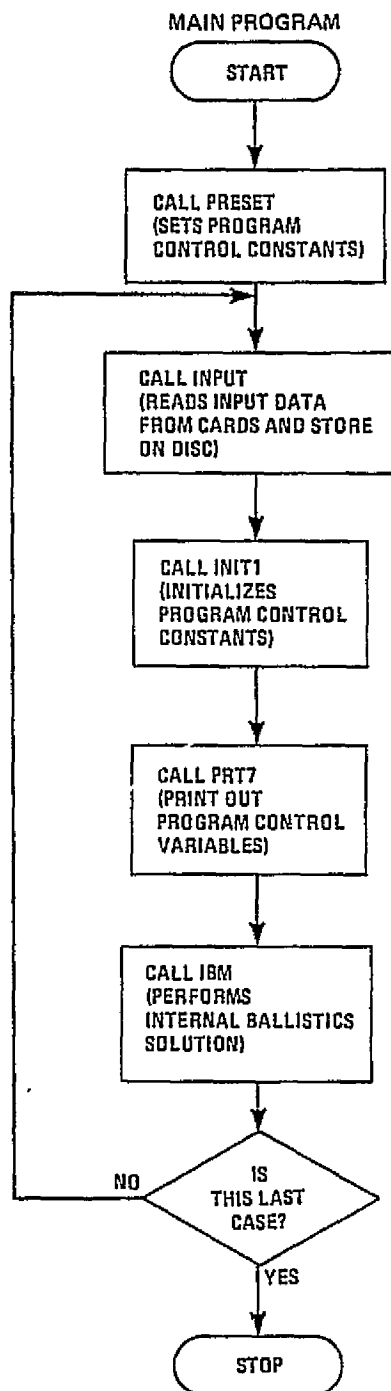


Figure 2-1. MAIN PROGRAM MACROSCOPIC FLOWCHART

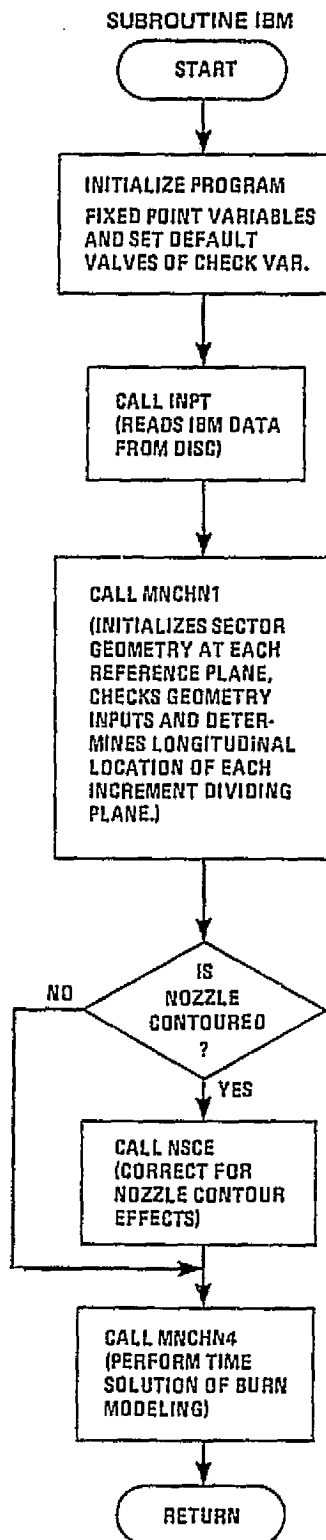


Figure 2-2. SUBROUTINE IBM MACROSCOPIC FLOWCHART

2.4 SUBROUTINE MNCHN1

Subroutine MNCHN1 is the control routine which determines initial sector propellant properties as a function of reference plane/sector input values, checks for grain geometry and motor case parameter input errors and determines the placement of increment dividing planes in the cylindrical section of the motor. Following this, the initial geometry values in the cylindrical section and the end sections are printed out.

2.5 SUBROUTINE NSCE

Subroutine NSCE is called to correct for nozzle contour effects if a contoured nozzle is being simulated. This subroutine is also called from subroutine MNCHN4 to perform steady and non-steady state nozzle flow calculations as required.

2.6 SUBROUTINE MNCHN4

Subroutine MNCHN4 is the control routine which obtains the time varying internal ballistics solution (see Figure 2-3). Its basic functions are to compute the head end performance parameters, the reference plane/sector geometry in the cylindrical section, and the aft-end performance parameters. In addition, MNCHN4 controls the iterative process for the calculation of head pressure at each time step during the solution. Several subroutines which provide detailed calculations in areas not mentioned above, are called by MNCHN4 and are described in the following paragraphs.

2.7 SUBROUTINE LOOKUP

This subroutine contains a linear interpolation scheme which is used to determine the reference plane sector perimeters, and the end sections burn areas as a function of distance burned. This subroutine is called from MNCHN4 at the beginning of each time point solution.

2.8 SUBROUTINE SEGSUB

Subroutine SEGSUB is the control routine which obtains the internal ballistics solution in the cylindrical section of the motor (see Figure 2-4). Sector values of port area and port perimeter length are determined at increment dividing planes by linear interpolation between adjacent reference planes.

SUBROUTINE MNCHN4

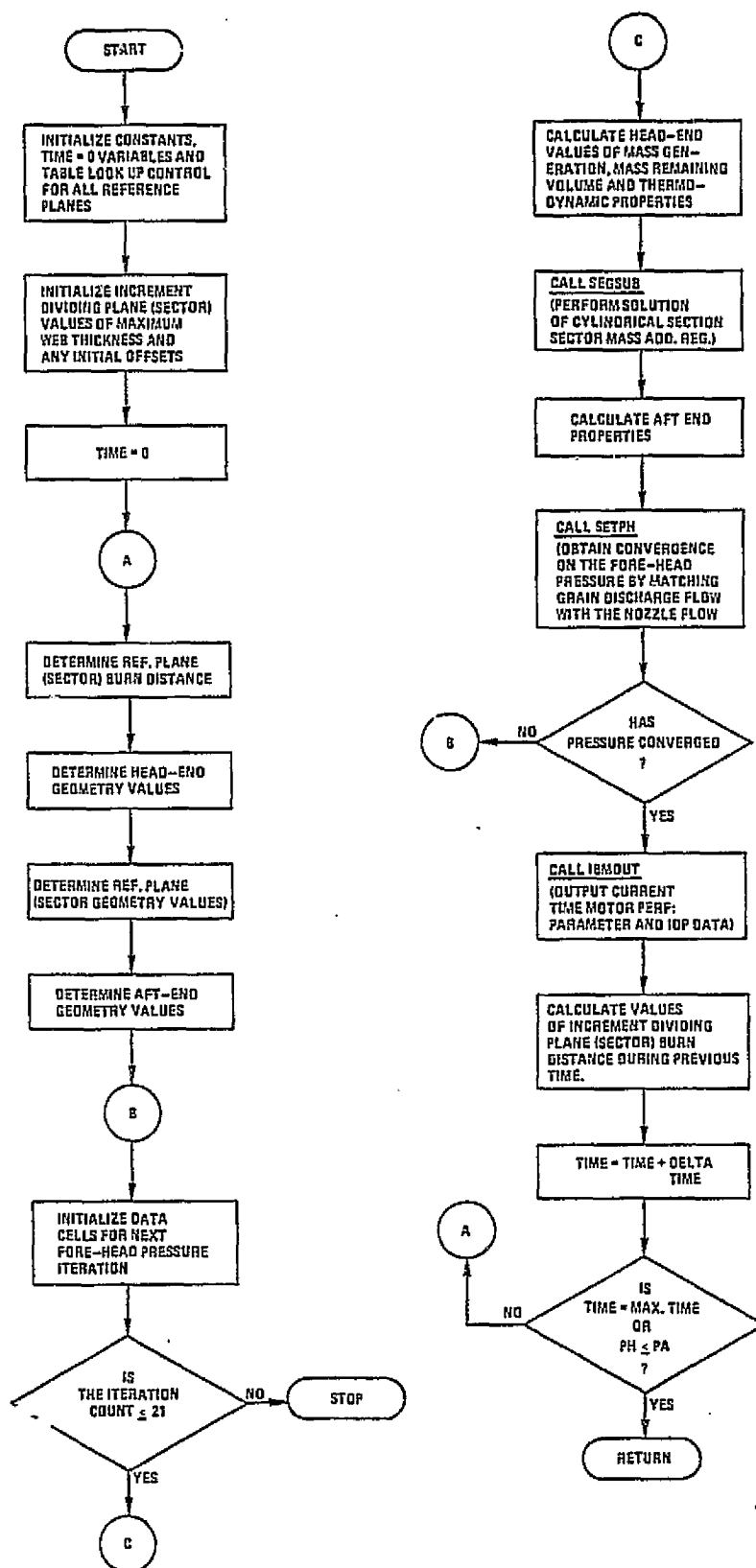


Figure 2-3. SUBROUTINE MNCHN4 MACROSCOPIC FLOWCHART

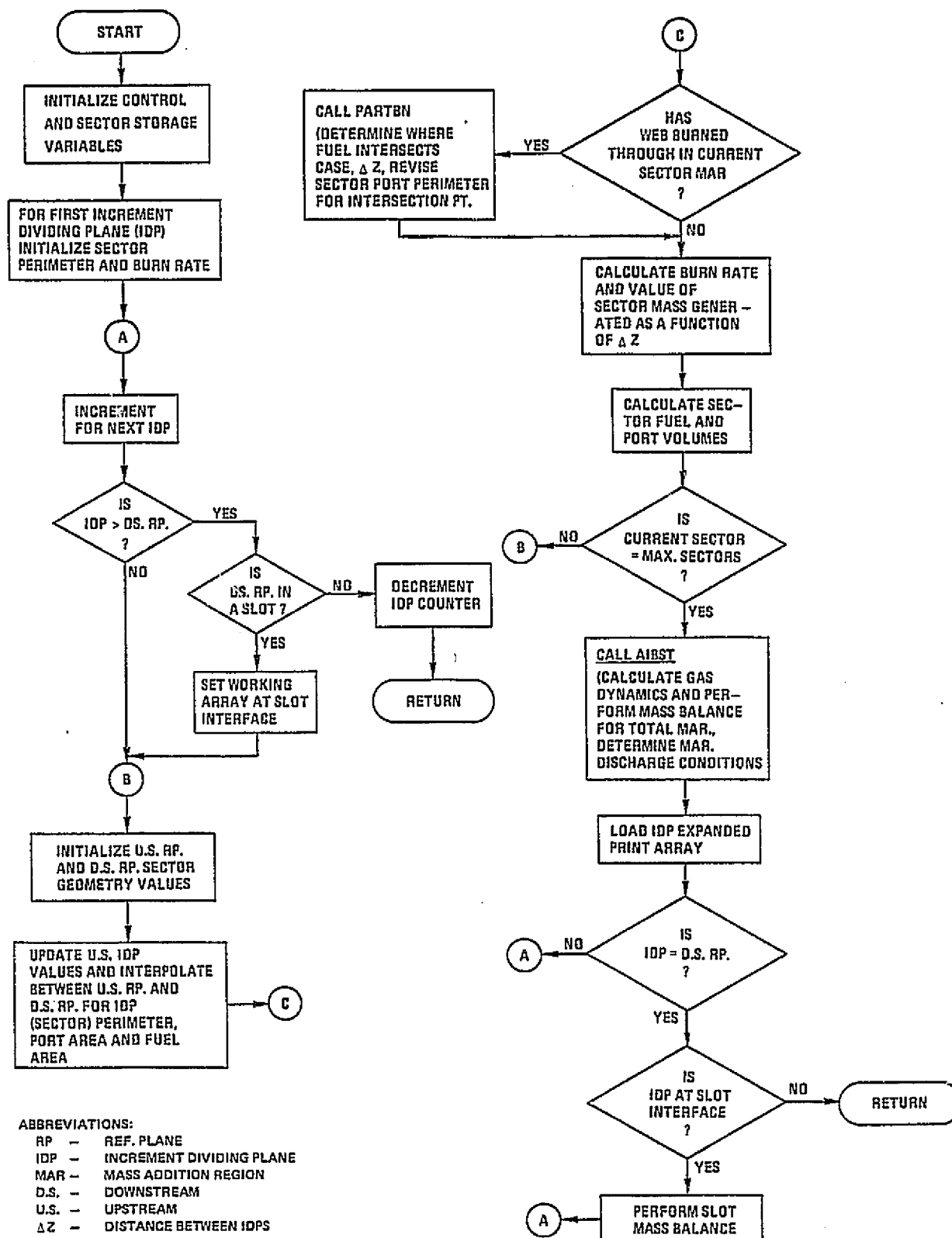


Figure 2-4. SUBROUTINE SEGSUB MACROSCOPIC FLOWCHART

Sector mass generation rates are next determined as a function of the sector geometry and sector burning rates. These sector values are then summed to produce total parameters for the mass addition region which are used to determine the gas dynamic solution at the downstream increment dividing plane in subroutine AIBST. The solution of the cylindrical section is a step process with each mass addition region being solved in a sequential manner down the length of the section.

2.9 SUBROUTINE RBSUB

Subroutine RBSUB determines the propellant burning rate at specified locations within the motor as a function of the static pressure at the appropriate location. This routine also determines sector burn rates at each increment dividing plane if asymmetrical radial gradients are input.

2.10 SUBROUTINE PARTBN

Subroutine PARTBN is called from subroutine SEGSUB to calculate sector geometry values in sectors of mass addition regions in which a partial web burnout has occurred. PARTBN determines the intersection point of the case wall and remaining fuel in the sector and then determines the revised sector increment length and sector perimeter at the intersection point.

2.11 SUBROUTINE AIBST

Subroutine AIBST is called indirectly by SEGSUB after the geometry and mass generation rates have been determined and summation performed for all sectors of a mass addition region. AIBST determines the pressure loss and changes in the gas properties due to mass addition and port area growth for the non steady solution of the internal ballistics.

2.12 SUBROUTINE SLOT

Subroutine SLOT is called by SEGSUB if a segmented motor is being simulated. This routine performs the mass balance and determines the gas properties at the discharge section of a slot.

2.13 SUBROUTINE SETPH

Subroutine SETPH is called by subroutine MNCHN4 and obtains convergence of the fore-head pressure iterations by matching the grain discharge flow with the nozzle flow which is determined as a function of the nozzle pressure. When convergence has been achieved for a particular time point solution, additional end item performance parameters are also calculated in this routine.

2.14 SUBROUTINE IBMOUT

Subroutine IBMOUT controls the program output after completion of each time point solution. This routine also calls subroutine TISUB which calculates and stores the values of distance burned during the previous time point in each sector of each increment dividing plane.

Section III

SRB-IIID PROGRAM SUPER INDEX LISTING

The super index listing of SRB-IIID is contained in Appendix A of this manual. This listing shows the Fortran code for each subroutine in the program and also provides an index of variables and the line on which they are used at the end of each subroutine listing. Following the subroutine listing, a super index is presented which lists all of the variable names used in the entire program and shows the subroutines in which they are used.

Section IV

SRB-IIID PROGRAM CROSS REFERENCE

The cross reference for the SRB-IIID program is shown in Appendix B of this manual and contains several lists useful to the program analyst. The first is a listing of the variables which are input and output in each subroutine. The second portion lists all of the variables contained in the program and shows the common block in which the variable is contained (if applicable) and each subroutine in which the variable is input and/or output. The variable list will be updated at a later date to include the definition of each variable.

Appendix A

SRB-IIID PROGRAM LISTING AND SUPER INDEX

I N D E X

PAGE 1

00001*		C	
00002*		C	SPACE SHUTTLE SOLID ROCKET BOOSTER PERFORMANCE EVALUATION MODEL
00003*		C	
00004*		C	EXECUTIVE MODULE (ROBERTS)
00005*		C	
00006*	1		IMPLICIT REAL (A-H,O-Z,M)
00007*	2		LOGICAL ERR
00008*	3		COMMON/BLK001/ERR,IN
00009*	4		COMMON/BLK005/NLEWIS,NS1,INF,NCASE5,NCASE
00010*	5		COMMON/BLK012/ NPRINT
00011*	6		COMMON/BLK025/NTAPE,NPLOT,NCARD,NSTAPE,NSCARD
00012*	7		NCASE=0
00013*	8		CALL PRESET
00014*	9	10	CONTINUE
00015*	10		CALL INPUT
00016*	11		CALL INIT1
00017*	12		NPRINT=7
00018*	13		CALL PRT1
00019*	14		CALL IBM
00020*	15	110	NCASE = NCASE + 1
00021*	16		IF (NCASES.EQ.NCASE)END FILE 13
00022*	17		IF (NTAPE.GT.0) CALL OUTTAP
00023*	18		IF (NCASES.EQ.NCASE) GO TO 120
00024*	19		GO TO 10
00025*	20	120	WRITE(6,130)
00026*	21	130	FORMAT(11,20(1),T45,'ALL DATA CASES COMPLETED
00027*		5')	
00028*	22		STOP
00029*	23		END

ORIGINAL PAGE IS
OF POOR QUALITY

SYMBOL	REFERENCES
10	9* 19
110	15*
120	18 20*
130	20** 21*
BLK001	300
BLK005	400
BLK012	500
BLK025	600
ERK	2LG 300
IBM	14
IN	300
INITI	11
INPUT	10
NCARD	600
NCASE	400 7* 15* 15 16 10
NCASES	400 16 18
NE	400
NLEWIS	400
NPLUT	600
NPRINT	500 12*
NSCARD	600
NSI	400
NSTAPE	600
NTAPL	600 17
OUTTAP	17
PRESLT	8
PRT1	13

I N D E X

FUNCTION ACOS (Z)

PAGE 3

00030*	1	FUNCTION ACOS (Z)	
00031*	2	COMMON/CONSTS/GN01,PI,RADIAN	490
00032*	3	ACOS = PI	
00033*	4	IF (Z .LE. -1.0) RETURN	510
00034*	5	ACOS = 0.0	520
00035*	6	IF (Z .GE. 1.0) RETURN	530
00036*	7	ACOS = PI/2.	
00037*	8	IF (Z .EQ. 0.0) RETURN	550
00038*	9	X = ABS(Z)	560
00039*	10	ACOS = SQRT(1. - X) * ((((((1. - .0012625 * X + .0066701) * X	570
00040*		C -.0174881) * X + .0308919) * X - .0501743) * X	580
00041*		C + .088979) * X - .2145988) * X + 1.5707963)	590
00042*	11	IF (Z .LT. 0.0) ACOS = PI-ACOS	
00043*	12	RETURN	610
00044*	13	END	620

I N D E X

PAGE 4

FUNCTION ACOS (2)

SYMBOL	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
ABS	=	9								
ACOS	=	1EY	3	5	7	10	11	11		
CONSTS	=	2C0								
GNOT	=	2C0								
PI	=	2C0	3	7	11					
RADIAN	=	2C0								
SQRT	=	14								
X	=	9	10	10	10	10	10	10	10	
Z	=	1AG	4	6	8	9	11			

00045*	1	SUBROUTINE AIBST(IE)	102120
00046*		CC	102300
00047*		C SUBROUTINE AIBST DETERMINES THE PRESSURE LOSS AND CHANGES IN THE	102400
00048*		C GAS PROPERTIES BETWEEN INCREMENT DIVIDING PLANES DUE TO MASS	102410
00049*		C ADDITION AND AREA CHANGE FOR THE NON-STEADY FLOW SOLUTION OF THE	102420
00050*		C INTERNAL BALLISTICS (SECTION 4.1-2.1).	102430
00051*		CC	102450
00052*	2	COMMON/CONSTS/GNOT,P1,RADIAN	
00053*	3	COMMON/INPUTG/CSTAK,GAMA,R,NCSTR,PRESS(20),CSTR(20),GAMA6(20),	
00054*		ANWGT(20),TCOND(20),NCSCUL	
00055*	4	COMMON/INPUTH/STFLAG,STDYST,DLT1,DLT15,DLT10	
00056*	5	COMMON/INPUTP/HEPS,TIMEPS(50),EPCL(50),EPCH(50),NACCEL,ACCELT(50),	
00057*		TIMEAC(50)	
00058*	6	COMMON/INPUTQ/CRP,CKT,CRW	
00059*	7	COMMON/INPUTU/DELF,PA,PHI,HCO,DELZ,KDUMPI(72)	
00060*	8	COMMON/WORKRN/RN1(8),VFH0,VCH,ACK(10)	
00061*	9	COMMON/DOHYL/NTST,TIMECK	
00062*	10	COMMON/COHA/DLT,APHI,WDOT1,ANIBU,TIMEW,UT,ANLOPS,ACCEL,	
00063*		ANCYL,PRN1(10,15),AINCH1,ANACH,ZCALC(101)	
00064*	11	COMMON/WORKA/AINC(1),ANODH,NF,N1	
00065*	12	COMMON/COHH/POPR(101),V(101),VPR(101)	
00066*	13	COMMON/COH6/TAUZ(101,8),RZ(101,8),PD(101),TAUWDP(101,8),RD,VF,	
00067*		10ADU1,VP	
00068*	14	COMMON/PARM6/AP,PMIN,PMAX,WDOT,111,112,WDOTD,NSLOT,NTABE,TOFLAG,	
00069*		10RHO1,113,151,152,N1,SCUR(18,2)	
00070*	15	COMMON/PARM7/PH,TIME,AINCW,T,P,DELTA,U,PON,UIS,AMPH,AT,AMW,AKNST	
00071*	16	COMMON/PARM8/VFH,AAH,VFH,VIS,AIT,SPHOT,SPONDT,VFINT,AUTOT	
00072*	17	COMMON/PARMK/F,EP1,PEPO,CFOI,VFWEB,WD,DEED,CLOPS,CFO,NGTOT,	
00073*		1 SADOIN	
00074*	18	COMMON/PARMS/ICNN	
00075*	19	COMMON/PARMAA/IO,IFLAG	
00076*	20	COMMON/COHA1H/VT(101)	
00077*	21	DATA UAP,TA1,POXI,POY1,E1,TY1,TE1,EP5/0.0,0/	102360
00078*	22	IF(TIME,Eq.0.0) TIMECK=-1.0	
00079*	23	DELZ=AINCH-AINCH1	102470
00080*	24	IF(STDYST-1.0)30,10,30	102480
00081*	25	CONTINUE	102490
00082*	26	IF(STFLAG)30,20,30	102500
00083*	27	CONTINUE	102510
00084*	28	CALL AIBSUB(IE)	102520
00085*	29	GO TO 630	102530
00086*	30	IF(INEPS)90,90,40	
00087*	31	CONTINUE	102560
00088*	32	IF(NTLST)50,50,90	
00089*	33	CONTINUE	102580
00090*	34	NTST=1	102590
00091*	35	IF(TIMECK-TIME)100,140,140	102650
00092*	36	CONTINUE	102660
00093*	37	TIMECK=TIME	102670
00094*	38	IF(INEPS)120,120,110	102680

GO095*	39	110	CONTINUE	102690
GO096*	40		CALL XLIN(TIMEPS,EPCA,NEPS,TIME,LPSA,27)	
GO097*	41		CALL XLIN(TIMEPS,EPCN,NEPS,TIME,LPSA,28)	
GO098*	42		EPS=EPSA+(EPSN-EPSA)*AINC*ZERODV(HCO)	102720
GO099*	43	120	IF (NACCEL) 140,140,130	102730
GO100*	44	130	CONTINUE	102740
GO101*	45		CALL XLIN(TIMEAC,ACCELT,NACCEL,TIME,ACCEL,29)	
GO102*	46	140	DAPHI=OAP	102760
GO103*	47		DAP=6.28318*EPS*HF**2	
GO104*	48		PRN1(111,0)=OAP	102780
GO105*	49		IL=0	102800
GO106*	50		FOOT1=WDOTD	102810
GO107*	51		PIN=PD(111)-1	102820
GO108*	52		PCR1T=PIN*11.+GAMA*AMACH**2.)/(GAMA+1.)	102830
GO109*	53		IF(111.LE.2)AMACH=U*ZERODV15QNT(16NU)*R*1*GAMA11	102840
GO110*	54		IF(111-N1)150,150,160	102850
GO111*	55	150	CONTINUE	102890
GO112*	56		V(111)=VT(111)	
GO113*	57		GO TO 170	102910
GO114*	58	160	V(111)=VCN-VFN	102920
GO115*	59	170	CONTINUE	102930
GO116*	60		IF(TIME-DELTS1)180,180,190	102940
GO117*	61	180	CONTINUE	102950
GO118*	62		PDPRI1=0.5*PHI	
GO119*	63		PDPRI11=0.5*PHI	
GO120*	64		VPR(111)=V(111)	102980
GO121*	65	190	CONTINUE	102990
GO122*	66		IF(PIN.GT.(0.5*PHI).OR.TIME.GT.0.01)GO TO 210	
GO123*	67	200	CONTINUE	103010
GO124*	68		WDOTD=0.0	
GO125*	69		PD(111)=0.5*PHI	
GO126*	70		RETURN	103040
GO127*	71	210	CONTINUE	103050
GO128*	72		IF(KDUMP(3))230,230,220	103060
GO129*	73	220	CONTINUE	103070
GO130*	74		WRITE(6,600)PIN,PD(111),PDPRI11-1,PDPRI11,V(111),VPR(111), XPHI,AP,U,UTMP,WDOT1,DNDOT,WDOTD,R,T,DELT,111,PDY,TEMP,ACCEL	103080
GO131*	75	230	CONTINUE	103090
GO132*	76		TS=T	103110
GO133*	77		AHSQ=AMACH**2.	103120
GO134*	78		D1=T*(GAMA-1.)*11.+GAMA*AMSQ)*AHSQ*WDOT*ZERODV(11.-AHSQ)*WDOT	103130
GO135*	79		DE=PIN*WDOT*2.*GAMA*AMSQ*(1.+(GAMA-1.)*AHSQ/2.)*ZERODV(WDOT1*(1.-	103140
GO136*	80		AHSQ)	103150
GO137*	81		FOOT=PIN-LP	103160
GO138*	82	240	ITER=0	103170
GO139*	83	250	IF(ITER-1)250,260,270	103180
GO140*	84		T=TS-DT	103190
GO141*	85	260	GO TO 270	103200
GO142*	86	270	T=TS-DT	
GO143*	87		TX2=TX1	103220

00145*	07		TXI=T	103230
00146*	08		DP=PIN-POUT	103240
00147*	09		IFLAG=0	103250
00148*	90	280	IF (IFLAG-1) 290,300,310	103260
00149*	91	290	CONTINUE	103270
00150*	92		PD(111)=PIN-DP	
00151*	93		GO TO 310	103290
00152*	94	300	PD(111)=PIN-DP	103300
00153*	95	310	PDX2=PDX1	103310
00154*	96		PDX1=PD(111)	103320
00155*	97		DWD1=((PD(111)+PIN)*(2.*V(111)-VPR(111))-V(111)*(PDPR(111)+	103330
00156*			XPDPR(111)-1))*ZERODV(12.*R*(TS+T)*DEL1)	103340
00157*	98		PRNT(111,11)=DWD1	103350
00158*	99		WDOTD=WDOT1+DWDOT-DWD1	103360
00159*	100		IF (WDOTD) 320,320,330	103370
00160*	101	320	CONTINUE	103380
00161*	102		WDOTD=L.O	103390
00162*	103		UTMP=D.O	
00163*	104		GO TO 332	
00164*	105	330	UTMP=WDOTD*R*T/(PD(111)*(AP+DAP))	
00165*	106	332	UMAX=SQR1(GNOT*GAMA*R*T)	
00166*	107		IF (UTMP .GT. UMAX) UTMP=UMAX	
00167*	108		WDOT=WDOTD	103420
00168*	109		PDY=(WDOTD+U*ZERODV(GNOT)-WDOTD*UTMP*ZERODV(GNOT)+PIN*(APHI+DAPHI	103430
00169*			X) + (PIN*PD(111))/2	103440
00170*			X=((AP+DAP-APHI-DAPHI)-(V(111)*(U+UTMP)*(PIN+PD(111)-PDPR(111)-	103450
00171*			XPDPR(111)-1))*(PD(111)+PIN)*(U+UTMP)*(V(111)-VPR(111))*ZERODV(24.*	103460
00172*			XGNOT*R	103470
00173*			X*(TS+T)*DEL1))*ZERODV(AP+DAP)	103480
00174*	110		TEMP=((PIN+PD(111))*(AP+DAP+APHI+DAPHI)*ACCEL*DELZ)*ZERODV(24.*R*(	103490
00175*			TS + T)*(AP + DAP))	103500
00176*	111		DP=PIN-PDY	
00177*	112		PDY=PDY+TEMP	103510
00178*	113		PDY2=PDY1	103520
00179*	114		PDY1=PDY	103530
00180*	115		E2=E1	103540
00181*	116		E1=(PDX1-PDY1)*ZERODV(PDX1)	103550
00182*	117		IF (KDUMP(3)) 350,350,340	103560
00183*	118	340	CONTINUE	103570
00184*	119		WRITE(6,580) IFLAG,PD(111),PDY,WDOTD,PDX2,PDY2,E1,E2	103580
00185*	120	350	IF (ABS1E1) - CRP 1490,490,360	103590
00186*	121	360	CONTINUE	103600
00187*	122		IFLAG=IFLAG+1	103610
00188*	123		IF (IFLAG.LT.2) GO TO 280	103620
00189*	124	370	IF (IFLAG-27) 380,380,400	103660
00190*	125	380	CONTINUE	103670
00191*	126		IF ((UTMP/UMAX) .LT. 0.75) GO TO 390	
00192*	127		SLOPE=(PDY2-PDY1)/(PDX2-PDX1)	
00193*	128		IF (ABS(SLOPE) .GT. 0.95) GO TO 390	
00194*	129		PD(111)=(PDY1-SLOPE*PDX1)/(1.0-SLOPE)	

GO195.	130		GO TO 310	
GO196.	131	390	IF (IFLAG .GT. 5) PD(111)=PDY-(PD(111)-PDY)	
GO197.	132		IF (IFLAG .GT. 5) GO TO 310	
GO198.	133		PD(111)=PDY-(PD(111)-PDY)*R*T/GNOT*(WDOTD/(PDY*(AP*DAP)))**2	
GO199.	134		GO TO 310	
GO200.	135	440	IE=1	103730
GO201.	136		PHIN=PH	103810
GO202.	137		IF (PMAX-5000.0) 460,450,450	103820
GO203.	138	450	CONTINUE	103830
GO204.	139		PH=1.1*PH	103840
GO205.	140		GO TO 470	103850
GO206.	141	460	PH=(PMAX*PH)/2.	103860
GO207.	142	470	CLOPS=.6	103870
GO208.	143		DEED=.0.0	103880
GO209.	144		WDOTD=.	103890
GO210.	145		GO TO 630	103900
GO211.	146	480	IF (UTMP.GE.UMAX) GO TO 440	103910
GO212.	147		WRITE(6,590) IFLAG	
GO213.	148		WRITE(6,500) IFLAG,PD(111),PDY,WDOTD,PDx2,PDY2,E1,E2	103930
GO214.	149		IE=2	103940
GO215.	150		ICHR=5	103950
GO216.	151		RETURN	103960
GO217.	152	490	CONTINUE	
GO218.	153		T=TU-(GAMA-1.)*UTMP**2/(2.*GNOT*GAMA*R)	
GO219.	154		D1=15-1	
GO220.	155		PDUT=PD(111)	103990
GO221.	156		TY2=TY1	104000
GO222.	157		TY1=1	104010
GO223.	158		TE2=TE1	104020
GO224.	159		TE1=(TX1-TY1)*ZERODV(TX1)	104030
GO225.	160		ITER=ITER+1	104040
GO226.	161		IF (ITER-2) 260,500,500	104050
GO227.	162	500	IF (ITER-2) 520,520,510	104060
GO228.	163	510	WRITE(6,610) III	104070
GO229.	164		WRITE(6,620) ITER,TX1,TY1,TX2,TY2,TE1,TE2	104080
GO230.	165		IE=2	104090
GO231.	166		ICHR=5	104100
GO232.	167		RETURN	104110
GO233.	168	520	IF (XDUMP(3)) 540,540,530	104120
GO234.	169	530	WRITE(6,620) ITER,TX1,TY1,TX2,TY2,TE1,TE2	104130
GO235.	170	540	IF (ABS(TE1)-CRT) 560,560,560	104140
GO236.	171	550	CONTINUE	
GO237.	172		GO TO 240	
GO238.	173	560	P=PD(111)	104160
GO239.	174		IF (UTMP.GE.UMAX) GO TO 440	104170
GO240.	175		U=UTMP	
GO241.	176		AMACH=U*ZERODV(SQRT(GNOT*GAMA*R*T))	104180
GO242.	177		DLTA=WDOTD*ZERODV(12.*(AP*DAP)*U)	104200
GO243.	178		AMPN=AMAX1(AMPN,AMACH)	104210
GO244.	179	580	FORNAT(2X,6HIFLAG=12,2X,3HPD=1PE10.3,2X,4HPDY=1PE10.3,2X,6HWDOTD=1	104230

00245*			XPE10.3,2X,5HPDX2=IPE10.3,2X,5HPDY2=IPE10.3,2X,3HE1=IPE10.3,2X,3HE2	104240
00246*			X=IPE10.3//)	104250
00247*	180	590	FORMAT(1X,7HICOUNT=13,1X,107HITERATION FOR INCREMENT DISCHARGE PRE	104260
00248*			ASSURE IN SUBROUTINE AIBST HAS FAILED **EXECUTION HAS BEEN TERMINAT	104270
00249*			XED**)	104280
00250*	181	600	FORMAT(//5H PIN=IPE10.3,2X,6HPD(111)=IPE10.3,2X,12HPDPR(111-1)=IPE	104290
00251*			X10.3,2X,10HPDPR(111)=IPE10.3,2X,7HV(111)=IPE10.3,2X,9HVPR(111)=IPE	104300
00252*			X10.3/6H APH=IPE10.3,2X,3HAP=IPE10.3,2X,2HU=IPE10.3,2X,5HUTHP=IPE1	104310
00253*			XU.3,2X,6HWDOT1=IPE10.3,2X,6HWDOT=IPE10.3,2X,6HWDOT0=IPE10.3/3H K=	104320
00254*			XIPE10.3,2X,2HT=IPE10.3,2X,5HDLT=IPE10.3,2X,4H111=13,2X,4HPDY=IPE1	104330
00255*			XU.3,2X,5HTLMP=IPE10.3,2X,6HACCEL=IPE10.3//)	104340
00256*	182	610	FORMAT(25HITERATION FOR INCREMENT,13,53HD)DISCHARGE TEMPERATURE IN	104350
00257*			XSUBROUTINE AIBST HAS FAILED.)	104360
00258*	183	620	FORMAT(1X,5HTER=13,2X,2H)=IPE10.3,2X,4HTY1=IPE10.3,2X,4HTX2=IPE10	104370
00259*			X.3,2X,4HTY2=IPE10.3,2X,4HTE1=IPE10.3,2X,4HTE2=IPE10.3//)	104380
00260*	184	630	IF(1.LT.520.0)IC=2	104390
00261*	185		IF(1E.EQ.2)ICNN=5	104400
00262*	186		RETURN	104410
00263*	187		END	104420

SYMBOL	-----	REFERENCES	-----
10	-	24	25.
20	-	26	27.
30	-	24	24 26 30.
40	-	30	31.
60	-	32	33.
90	-	30	32 35.
100	-	35	36.
110	-	38	39.
120	-	38	43.
120	-	43	44.
140	-	35	43 43 46.
150	-	54	54 55.
160	-	54	58.
170	-	57	59.
180	-	60	61.
190	-	60	65.
200	-	67.	
210	-	66	71.
220	-	72	73.
230	-	72	75.
240	-	82.	172
250	-	82	83.
260	-	82	85. 161
270	-	82	84 86.
280	-	90.	123
290	-	70	91.
300	-	90	94.
310	-	90	93 95. 130 132 134
320	-	100	100 101.
330	-	100	105.
332	-	104	106.
340	-	117	118.
350	-	117	117 120.
360	-	120	121.
370	-	124.	
380	-	124	124 125.
390	-	126	128 131.
440	-	135.	146 174
450	-	137	137 138.
460	-	137	141.
470	-	140	142.
480	-	124	146.
490	-	120	120 152.
500	-	161	161 162.
510	-	162	163.
520	-	162	168.
530	-	168	169.
540	-	168	168 170.

[illegible]

DAPHI	=	46=	109	109	110							
DEED	=	17CO	143=									
DELF	=	7CO										
DELT	=	10CO	74WR	97	109							
DELTA	=	15CO	177=									
DEL155	=	4CO										
DELTST	=	5CO	60									
DELT10	=	8CO										
DELT2	=	7CO	23=	110								
D15	=	15CO										
DP	=	79=	80	88=	92	94	111=					
DT	=	78=	83	85	154=							
DUMYC	=	9CO										
DNDOT	=	13CO	74WR	78	79	99						
DADT	=	97=	98	99								
E1	=	21DA	115	116=	119WR	120	148WR					
E2	=	115=	119WR	148WR								
EP1	=	17CO										
EPCA	=	5CO	40AG									
EPCN	=	5CO	41AG									
EPS	=	21DA	42=	47								
EPSA	=	40AG	42	42								
EPSN	=	41AG	42									
F	=	17CO										
GAMA	=	3CO	52	52	53	78	78	79	79	106	153	
		153	176									
GAMAG	=	3CO										
GNOT	=	2CO	53	106	109	109	109	133	153	176		
HCO	=	7CO	42									
ICHN	=	18CO	150=	166=	185=							
IE	=	1AG	28AG	49=	135=	149=	165=	184=	185			
IFLAG	=	19CO	89=	90	119WR	122=	122	123	124	131	132	
		147WR	148WR									
III	=	14CO	48	51	53	54	56	56	58	63	64	
		64	69	74WR	74WR	74WR	74WR	74WR	74WR	92	94	
		96	97	97	97	97	97	97	98	105	109	
		109	109	109	109	109	109	109	110	119WR	129	
		131	131	133	133	148WR	155	163WR	173			
IIJ	=	14CO										
IIS	=	14CO										
INPUTG	=	3CO										
INPUTH	=	4CO										
INPUTP	=	5CO										
INPUTQ	=	6CO										
INPUTU	=	7CO										
IS1	=	14CO										
IS2	=	14CO										
ITER	=	81=	82	160=	160	161	162	164WR	169WR			
KDUMP	=	7CO	72	117	168							
KACCEL	=	5CO	43	45AG								

[illegible]

[illegible]

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SUBROUTINE ADJUST(IE)

PAGE 15

XLIN	=	40	41	45						
ZCALC	=	1000								
ZLRDVR	=	42	53	78	79	97	109	109	109	110
		116	159	176	177					

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00264*	1	SUBROUTINE AIBSUB(IE)	87720
00265*		CC	87870
00266*	C	SUBROUTINE AIBSUB DETERMINES THE PRESSURE LOSS AND CHANGES IN THE	87890
00267*	C	GAS PROPERTIES BETWEEN INCREMENT DIVIDING PLANES DUE TO MASS	87900
00268*	C	ADDITION AND AREA CHANGE FOR THE SOLUTION OF THE INTERNAL	87910
00269*	C	BALLISTICS NEGLECTING TRANSIENT EFFECTS (SECTION 4.1.1).	87920
00270*		CC	87940
00271*	2	COMMON/CONSTS/GHUT,PI,RADIAN	
00272*	3	COMMON/INPUTG/CSTAR,GAMA,R,HCTR,PRESS(20),CSTR(20),GAMAG(20),	
00273*		ANWG(20),TCOMB(20),HC5COL	
00274*	4	COMMON/INPUTH/STFLAG,STOYST,DELTS1,DELTS5,DELTS10	
00275*	5	COMMON/INPUTU/DELF,PA,PHI,HCO,DELZ,KDUMP(72)	
00276*	6	COMMON/DUMYD/TIMP,UTMP	
00277*	7	COMMON/COMA/DELT,APHI,WDOT1,ANIBO,TIMEX,UT,ANLUPS,ACCEL,	
00278*		AUCYL,PRNT(10,15),AINC1,ANACH,ZCALC(101)	
00279*	8	COMMON/CONG/TAUZ(101,8),RBZ(101,8),PD(101),TAUWDP(101,8),RB,VF,	
00280*		DWDOT,VP	
00281*	9	COMMON/PARHB/AP,PHI,PHAX,WDOT,11,11J,WDOTD,NSLOT,NTADE,TUFLAG,	
00282*		BRNDOT,115,151,152,N1,SCUR(18,2)	
00283*	10	COMMON/PARH/PH,TIME,AINC,T,P,DELTA,U,PON,D15,AMPN,AT,AMW,AKKST	
00284*	11	COMMON/PARHAA/TO,IFLAG	
00285*	12	IF=J	87960
00286*	13	PBAR=P	
00287*	14	IF(STFLAG)10,20,10	87970
00288*	15	10 CONTINUE	87980
00289*	16	CALL AIBST(IE)	87990
00290*	17	RETURN	88000
00291*	18	20 CONTINUE	88010
00292*	19	WDOT1=WDOT	88020
00293*	20	WDOT=WDOT1+DWDOT	88030
00294*	21	IF(WDOT)30,1001,30	
00295*	22	1001 IF(TIME.GT.0.0) GO TO 1000	
00296*	23	GO TO 21J	
00297*	24	30 CAA=WDOT*(2.*AP-(GAMA*(APHI+AP)/(2.*GAMA)-(APHI+AP)/(2.*GAMA)))	88050
00298*	25	CBB=(APHI+AP)*GNOT*AP*P+2.*AP*WDOT1*U	88060
00299*	26	CC=(APHI+AP)*TO*R*GHOT1*WDOT	88070
00300*	27	RAD=CBB*.2-4.*CC*CAA	88080
00301*	28	IF(RAD)30,40,40	88090
00302*	29	40 TEMP6=1.-SQRT(RAD)/CBB	88100
00303*	30	IF(TEMP6-.000170,50,50)	88110
00304*	31	50 UTMP=CBB*TEMP6/(2.*CAA)	88120
00305*	32	IF(UTMP)70,70,60	88130
00306*	33	60 DLTMP=WDOT/(12.*AP*UTMP)	88140
00307*	34	GO TO 90	88150
00308*	35	70 DLTMP=DELTA	88160
00309*	36	80 UTMP=WDOT/(12.*AP*DLTMP)	88170
00310*	37	90 TIMP=TO-(GAMA-1.)*UTMP*.2/(2.*GNOT*R*GAMA)	88180
00311*	38	XBAR=.5*(U/SQRT(GHOT*R*GAMA*T)+UTMP/SQRT(GHOT*R*GAMA*TLTMP))	
00312*	39	PIMP=P+WDOT1*U/(GNOT*APHI)-WDOT1*UTMP/(GNOT*AP)-	
00313*		+ 2.*GAMA*PBAR*XBAR*.2*(AP-APHI)/(AP+APHI)	

00314*	40	P1NP=P-(WDOT*UTMP-WDOT1*U)*2./(WDOT*(APH1+API))	88190
00315*	41	TEMP6=PTMP/(12.*R*TTMP)	88200
00316*	42	TEMP1=DLTMP-TEMP6	88210
00317*	43	IF (ABS(TEMP1)/DLTMP-.0001) 110,110,100	88220
00318*	44	DLTMP=TEMP6	88230
00319*	45	PDAK=0.5*(P+PTMP)	
00320*	46	GO TO 06	
00321*	47	IF (UTMP-U1) 120,120,130	88240
00322*	48	1000 TTMP=10	88250
00323*	49	P1NP=P	
00324*	50	DLTMP=0.0	
00325*	51	UTMP=0.0	
00326*	52	1=TTMP	
00327*	53	P=PTMP	88260
00328*	54	PD(111)=PTMP	88270
00329*	55	DELTA=DLTMP	88280
00330*	56	U=UTMP	88290
00331*	57	GO TO 190	88300
00332*	58	PHIN=PH	88310
00333*	59	TEMP6=PH+PH1	88320
00334*	60	IF (TEMP6-PHAX) 140,150,150	88330
00335*	61	PH=TEMP6	88340
00336*	62	GO TO 160	88350
00337*	63	PH=(PHAX-PHIN)*.9+PHIN	88360
00338*	64	TEMP1=PHAX/1000000.	88370
00339*	65	IF (ABS(PHAX-PHIN)-TEMP1) 180,180,170	88380
00340*	66	IE=1	88390
00341*	67	GO TO 210	88400
00342*	68	PH=PHAX	88410
00343*	69	PHIN=PHAX	88420
00344*	70	GO TO 170	88430
00345*	71	TEMP1=GAMA-1.	88440
00346*	72	TEMP6=SQR(1-(1-Q-TTMP)*2./(TEMP1*TTMP))	88450
00347*	73	AMACH=TEMP6	88460
00348*	74	IF (TEMP6-AMPH) 210,210,200	88470
00349*	75	AMPH=TEMP6	88480
00350*	76	IF (KDUMP(3)) 240,240,220	88490
00351*	77	WRITE(6,230)P,APH1,AP,DELTA,U,R,T,WDOT1,WDOT,OWDOT,111	88500
00352*	78	230 FURNAT(//3H P=IPE10.3,2X,5HAPH1=IPE10.3,2X,3HAP=IPE10.3,2X,6HDELTA	88510
00353*		X=IPE10.3,2X,2HU=IPE10.3,2X,2HHR=IPE10.3,2X,2HT=IPE10.3,2X,7H WDOT1=	88520
00354*		X IPE10.3,2X,5HWDOT=IPE10.3,2X,6HWDOT=IPE10.3,2X,4H11=13//1	88530
00355*	79	240 RETURN	88540
00356*	80	END	88550

SYMBOL

REFERENCES

10	-	14	14	15							
20	-	14	18								
30	-	21	21	24							
40	-	28	28	29							
50	-	30	30	31							
60	-	32	33								
70	-	36	32	32	35						
80	-	36	46								
90	-	34	37								
100	-	43	44								
110	-	43	43	47							
120	-	47	47	52							
130	-	28	47	58							
140	-	66	61								
150	-	66	60	63							
160	-	62	64								
170	-	65	66	70							
180	-	65	65	68							
190	-	57	71								
200	-	74	75								
210	-	23	67	74	74	76					
220	-	76	77								
230	-	77WR	78								
240	-	76	76	79							
1000	-	22	48								
1001	-	21	22								
ABCYL	-	7CO									
ABS	-	43	65								
ACCLL	-	7CO									
AIBST	-	16									
AIBSUB	-	1EY									
AINCHI	-	7CO									
AINC*	-	10CO									
AKHST	-	10CO									
AMACH	-	7CO	73								
AMPH	-	10CO	74	75							
ANW	-	10CO									
ANWG	-	3CO									
ANIBU	-	7CO									
ANLOPS	-	7CO									
AP	-	9CO	24	24	24	25	25	25	26	33	36
		39	39	39	40	77WR					
APH1	-	7CO	24	24	25	26	39	39	39	40	77WR
AT	-	10CO									
BRNDUT	-	9CO									
CAA	-	24	27	31							
CBB	-	25	27	29	31						
CC	-	26	27								

I N D E X

SUBROUTINE AIDSUB(IE)

[illegible]

PRNT	=	7C0											
PTMP	=	39=	40=	41	45	49=	53	54					
R	=	3C0	26	37	38	38	41	77WK					
RAD	=	27=	28	29									
RADIAN	=	2C0											
RB	=	8C0											
RBZ	=	8C0											
SCUR	=	9C0											
SQRT	=	29	38	38	72								
STOYST	=	4C0											
STFLAG	=	4C0	14										
T	=	10C0	38	52=	77WK								
TAUWDP	=	8C0											
TAUZ	=	8C0											
TCONB	=	3C0											
TEMP1	=	42=	43	64=	65	71=	72						
TEMP6	=	29=	30	31	41=	42	44	59=	60	61	72=		
		73	74	75									
TIME	=	10C0	22										
TIMEW	=	7C0											
TO	=	11C0	26	37	48	72							
TOFLAG	=	9C0											
TTHP	=	6C0	37=	38	41	48=	52	72	72				
U	=	10C0	25	38	39	40	56=	77WK					
UT	=	7C0	47										
UTHP	=	6C0	31=	32	33	36=	37	38	39	40	47		
		51=	56										
VF	=	8C0											
VP	=	8C0											
WDOT	=	9C0	19	20=	21	24	26	33	36	39	40		
		77WK											
WDOTD	=	9C0											
WDOTI	=	7C0	19=	20	25	39	40	77WK					
WMBAN	=	38=	39										
ZCALC	=	7C0											

I N D E X

FUNCTION ASIN(X)

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00357*	1	FUNCTION ASIN(X)
00358*	2	ASIN = $3.1415927 / 2 - \text{ACOS}(X)$
00359*	3	RETURN
00360*	4	END

630

640

650

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FUNCTION ASIN(X)

SYMBOL

REFERENCES

ACDS	-	2	
ASIN	-	IEY	2
X	-	IAG	2

SUBROUTINE CONV

00361.	1	SUBROUTINE CONV	88570
00362.		CC	88660
00363.		C SUBROUTINE CONV DETERMINES NEW ITERATIONS VALUE FOR EITHER AKRST	88680
00364.		C OR PCTAB DURING THE START TRANSIENT CALCULATIONS FOR THE INTERNAL	88690
00365.		C BALLISTIC SOLUTION.	88700
00366.		CC	88720
00367.	2	COMMON/INPUTF/NPH,PHST(70),TIMEPH(70),PCTAB	
00368.	3	COMMON/INPUTU/DELF,PA,PHI,HCO,DEL2,KDUMP(72)	
00369.	4	COMMON/DUMYQ/TIMCK,AKRHLD,PCTABX	
00370.	5	COMMON/DUMYQ/DISB,WDB	
00371.	6	COMMON/PARMB/AP,PHIN,PMAX,WDOT,111,11J,WDOTD,NSLOT,NTABE,TOFLAG,	
00372.		1 IRHOUT,115,151,152,N1,SCUR(10,2)	
00373.	7	COMMON/PARMF/PH,TIML,AINCW,1,P,DELTA,U,PON,DIS,AMPH,AT,AMW,AKRST	
00374.	8	COMMON/PARMK/F,EPI,PEPD,C1OL,VFWLB,W,DEED,CLOPS,CFO,WGTOT,	
00375.		1 SHDOT	
00376.	9	IF (AKRST) 10,10,140	88740
00377.	10	DIFAKR=AKRST-AKRHL	
00378.	11	AKRHLD=AKRST	88850
00379.	12	IF (CLOPS-1.) 140,50,40	88860
00380.	13	CONTINUE	88870
00381.	14	WD=(WDOT-WDB)/DIFAKR	88880
00382.	15	DEED=(DIS-DISB)/DIFAKR	88890
00383.	16	50 IF (DEED-WD) 140,60,90	88900
00384.	17	CONTINUE	88910
00385.	18	IF (WDOT-DIS) 70,70,80	88920
00386.	19	CONTINUE	88930
00387.	20	AKRST=.99*AKRST	88940
00388.	21	GO TO 110	88950
00389.	22	80 AKRST=1.01*AKRST	88960
00390.	23	GO TO 110	88970
00391.	24	90 DIFAKR=(WDOT-DIS)/(DEED-WD)	88980
00392.	25	AKRST=AKRST+DIFAKR	89010
00393.	26	110 WDB=WDOT	
00394.	27	DISB=DIS	89000
00395.	28	IF (KDUMP(6)) 270,270,120	
00396.	29	CONTINUE	89070
00397.	30	WRITE(6,130) AKRST,DIFAKR,WDOT,DIS,W,DEED	89080
00398.	31	130 FORMAT(7H AKRST=1PE11.4,2X,7HDIFAKR=1PE11.4,2X,5HWDOT=1PE11.4,2X,4	89090
00399.		XHDIS=1PE11.4,2X,3HWDB=1PE11.4,2X,5HDEED=1PE11.4)	89100
00400.	32	GO TO 270	89110
00401.	33	140 DIFAB=PCTAB-PCTABX	89120
00402.	34	PCTABX=PCTAB	89130
00403.	35	IF (CLOPS-1.) 150,160,150	89140
00404.	36	CONTINUE	89150
00405.	37	WD=(WDOT-WDB)/DIFAB	89160
00406.	38	DEED=(DIS-DISB)/DIFAB	89170
00407.	39	160 IF (DEED-WD) 200,170,200	89180
00408.	40	CONTINUE	89190
00409.	41	IF (WDOT-DIS) 180,180,190	89200
00410.	42	CONTINUE	89210

CO411*	43		PCTAB=PCTAB*1.001	89220
CO412*	44		GO TO 210	89230
CO413*	45	190	PCTAB=PCTAB*0.999	89240
CO414*	46		GO TO 210	89250
CO415*	47	200	DIFAB=(WDOT-DIS)/(DEED=WD)	89260
CO416*	48		WDB=WDOT	89270
CO417*	49		DISB=DIS	89280
CO418*	50		PCTAB=PCTAB+DIFAB	89290
CO419*	51	210	IF (KOUNP(6)) 270,270,220	89300
CO420*	52	220	CONTINUE	89310
CO421*	53		WRITE(6,230)PCTAB,DIFAB,WDOT,DIS,WD,DEED	89320
CO422*	54	230	FORMAT(7H PCTAB=1PE11.4,2X,6HDIFAB=1PE11.4,2X,5HWDOT=1PE11.4,2X,4H	89330
CO423*			XDIS=1PE11.4,2X,3HWD=1PE11.4,2X,5HDEED=1PE11.4)	89340
CO424*	55	270	CONTINUE	89420
CO425*	56		TIMCK=TIME	89430
CO426*	57		RETURN	89440
CO427*	58		END	

SUBROUTINE CONV

SYMBOL	REFERENCES
10	9 9 10*
40	12 12 13*
50	12 16*
60	16 17*
70	18 18 19*
80	18 22*
90	16 16 24*
110	21 23 26*
120	28 29*
130	30WR 31*
140	9 33*
150	35 35 36*
160	35 39*
170	39 40*
180	41 41 42*
190	41 45*
200	39 39 47*
210	44 46 51*
220	51 52*
230	53WR 54*
270	28 32 51 51 55*
AINC*	7CO
AKRHL0	4CO 16 11*
AKKST	7CO 10 11 20* 20 22* 22 25* 25 30WR
AMPN	7CO
ANW	7CO
AP	6CO
AT	7CO
BRNOVI	6CO
CFO	8CO
CFOL	8CO
CLOPS	8CO 12 35
CONV	1EY
DEED	8CO 15* 16 24 30WR 36* 39 47 53WR
DELF	3CO
DELTA	7CO
DELZ	3CO
DIFAB	33* 37 38 47* 50 53WR
DIFAKR	10* 14 15 24* 25 30WR
DIS	7CO 15 18 24 27 30WR 38 41 47 49
	53WR
DISB	5CO 15 27* 38 49*
DUMYG	4CO
DUMYU	5CO
EPI	8CO
F	8CO
HCO	3CO
III	6CO

00428.	1	BLOCK DATA
00429.	2	IMPLICIT REAL (A-H,O-Z,H)
00430.	3	LOGICAL LIST1,STATIC
00431.	4	COMMON/BLK009/MITOT,S11,DELT,MPR,M12
00432.	5	COMMON/BLK021/CSCOE(13),LIST1,STATIC
00433.	6	COMMON/BLK023/ DATA101,NWRDS,NUNIT
00434.	7	COMMON/BLK025/ NTAPL,NPLOT,NCARD,NSTAPL,NSCARD
00435.	8	COMMON/BLK026/ NIDFLG
00436.	9	COMMON/BLK030/ COLINT(5)
00437.	10	COMMON/BLK031/ PRIC,PTIME,PRTISS,PRTI10,PRTISP,PRTIST
00438.	11	DATA COEINT/0.0,1.7724571,-2.1492405,1.1124630,0.26027076/
00439.	12	DATA CSCOE/4735.23,0.09546955,-0.359902L-04/
00440.	13	DATA LIST1/.FALSE./
00441.	14	DATA MITOT/15001.0/
00442.	15	DATA NCARD/0/
00443.	16	DATA NIDFLG/0/
00444.	17	DATA NPLOT/0/
00445.	18	DATA NTAPL/0/
00446.	19	DATA NSTAPL/0/
00447.	20	DATA NSCARD/0/
00448.	21	DATA NUNIT/11/
00449.	22	DATA NWRDS/10/
00450.	23	DATA PRIC/2.0/
00451.	24	DATA PRTISS/2.0/
00452.	25	DATA PRTISP/0.5/
00453.	26	DATA PRTIST/0.25/
00454.	27	DATA PRTI10/1.0/
00455.	28	DATA PTIME/0.0/
00456.	29	DATA S11/190.0/
00457.	30	DATA STATIC/.TRUE./
00458.	31	END

SYMBOL

REFERENCES

BLK009	-	4C0		
BLK021	-	5C0		
BLK023	-	6C0		
BLK025	-	7C0		
BLK026	-	8C0		
BLK030	-	9C0		
BLK031	-	10C0		
COEINT	-	9C0	11DA	
CSCOLF	-	5C0	12DA	
DATA	-	6C0		
DELT	-	4C0		
LIST1	-	3LG	5C0	13DA
HITOT	-	4C0	14DA	
HIZ	-	4C0		
MPR	-	4C0		
NCARD	-	7C0	15DA	
NIBILG	-	8C0	16DA	
NPL0T	-	7C0	17DA	
NSCARD	-	7C0	20DA	
NSTAPE	-	7C0	19DA	
NTAFL	-	7C0	18DA	
NUHIT	-	6C0	21DA	
NARDS	-	6C0	22DA	
PRIC	-	10C0	23DA	
PRTISP	-	10C0	25DA	
PRTISS	-	10C0	24DA	
PRTIST	-	10C0	26DA	
PRTITO	-	10C0	27DA	
PTIME	-	10C0	28DA	
SII	-	4C0	29DA	
STATIC	-	3LG	5C0	30DA

I N D E X

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SUBROUTINE DATLOC(NAME)

00459*	1	SUBROUTINE DATLOC(NAME)	
00460*	2	COMMON/BLKDD1/ERR,IN	
00461*	3	LOGICAL ERR	
00462*	4	REAL NAME,A(14)	
00463*	5	ERR = .FALSE.	3570
00464*	6	FLWIND IN	
00465*	7	10 READ(IN,20,END=30) (A(I),I=1,14)	3600
00466*	8	20 FORMAT(13A6,A2)	3610
00467*	9	IF(A(1).EQ.NAME) RETURN	
00468*	10	GO TO 10	
00469*	11	30 WRITE(6,40) NAME	
00470*	12	40 FORMAT('END ',A6,' DATA CARDS FOUND - GOING TO NEXT CASE')	3650
00471*	13	ERR = .TRUE.	
00472*	14	RETURN	
00473*	15	END	

I N D E X

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SUBROUTINE DATLOC(NAME)

SYMBOL

REFERENCES

10	-	7*	10		
20	-	7RD	8*		
30	-	7RD	11*		
40	-	11WR	12*		
A	-	4RL	7RD	9	
BLKOUT	-	2CO			
DATLOC	-	1EY			
ERR	-	2CO	3LG	5*	13*
I	-	7RD	7RD		
IN	-	2CO	6	7RD	
NAME	-	1AG	4RL	9	11WR

00474*	1	SUBROUTINE ENDCSB(IER)	62600
00475*		CC	62730
00476*	C	SUBROUTINE ENDCSB DETERMINES THE COEFFICIENTS OF A FOURTH DEGREE	62750
00477*	C	POLYNOMIAL EQUATION OBTAINED BY THE INTERSECTION OF AN ELLIPSE AND	62760
00478*	C	A CIRCLE, CAE, CHE, CCCE, CCVE, CDCE, CDVE, AND VEVE AND	62770
00479*	C	DETERMINES THE CONSTANTS RE1, RE2, ALFE, ALFEH, HE1, HE2, AND HE0	62780
00480*	C	THAT DEFINE THE GEOMETRY OF THE FOREHEAD AND AFT-HEAD SECTIONS	62790
00481*	C	(SECTION 5.2.3.1).	62800
00482*		CC	62820
00483*	2	COMMON/CONSTS/GNOT,PI,RADIAN	
00484*	3	COMMON/INPUTC/DLRF	
00485*	4	COMMON/WORKA/AINC(1),ANODM,RF,RI	
00486*	5	COMMON/WORKDE/DE1,BE,AOEM	
00487*	6	COMMON/WORKKE/KE1,ALFEH,ALFE,HE2,HE1,HE2,HE0,HER,VFE0,VCE,	
00488*	1	TAU0,TAUE1,CAE,CBE,CCCE,CCVE,CDCE,CDVE,CECE,CEVE	
00489*	7	COMMON/COMP/DELL	
00490*	8	COMMON/CONT/TAU,XBARH,AFF,AJPP	
00491*	9	COMMON/PARMAB/HSUBHG,NSUBHG,NEND	
00492*	10	COMMON/PARMAC/DELH	
00493*	11	COMMON/PARMAI/VFNA,VFNB,VCNA,VCNB	
00494*	12	IER=0	62840
00495*	13	WRITE(6,10)	62860
00496*	14	10 FORMAT(5H DE1,12X,2HDE,13X,4HAOLM,12X,4HNEED,12X,4HDELH)	
00497*	15	WRITE(6,20) DE1,BE,AOEM,NEND,DELH	
00498*	16	20 FORMAT(1X,31PE15.7),5X,12,8X,E15.7)	
00499*	17	ALFE=AOEM/RADIAN	62900
00500*	18	RE1=DE1/2.	62910
00501*	19	IF(ALFE)30,30,50	62920
00502*	20	30 WRITE(6,40)	62930
00503*	21	40 FORMAT(21H0ALFA E MAX TOO SMALL)	62940
00504*	22	IER=1	62950
00505*	23	50 IF(RE1-RF)80,80,60	62960
00506*	24	60 WRITE(6,70)	62970
00507*	25	70 FORMAT(14H0RE1 TOO LARGE)	62980
00508*	26	IER=1	62990
00509*	27	80 IF(BE-1.0)90,120,90	63000
00510*	28	90 IF(1.01-ABS(BE-1.0))120,120,100	63010
00511*	29	100 WRITE(6,110)	63020
00512*	30	110 FORMAT(15H0INVALID BETA E)	63030
00513*	31	IER=1	63040
00514*	32	120 ALH=ACOS(RE1/SQRT((RF**2-RE1**2)*BE**2+RE1**2))	63050
00515*	33	IF(AER-ALFE)130,130,140	63060
00516*	34	130 ALFE=AER	63070
00517*	35	HE2=RE1	63080
00518*	36	HE1=0	63090
00519*	37	GO TO 150	63100
00520*	38	140 ALFE=ALFEH	63110
00521*	39	RE2=COS(ALFE)*RF*BE/SQRT(COS(ALFE)**2*BE**2-COS(ALFE)**2*1.0)	63120
00522*	40	HE1=(RE2-RE1)/SIN(ALFE)*COS(ALFE)	63130
00523*	41	150 HE2=SQRT(RF**2-RE2**2)/BE	63140

00524*	42	HEO=HE1+HE2	63150
00525*	43	IF (NEND.EQ.2	
00526*	44	IF (HEO-(RF-R1)) 170,160,140	
00527*	45	160 HER=HEO	63170
00528*	46	GO TO 100	63180
00529*	47	170 HLR=RF-R1	
00530*	48	GO TO 100	
00531*	49	175 HER=HEO+DELM	
00532*	50	180 DELL=DLRF*RF	63200
00533*	51	TAUE1=SQRT((HE2-RE1)**2+HE1**2)	63240
00534*	52	TAUE0=SQRT((RF-RE1)**2+HEO**2)	63250
00535*	53	190 ALITHE=RF/DE	63260
00536*	54	TAU=0	63270
00537*	55	TEMP1 = ((HE2*RE1+HE1**2+HE2**2)/3.0)*HE1*PI	63300
00538*	56	TEMP2 = ((ALITHE**2+3.0*HE2**2)/3.0)*HE2*DE**2*PI	63310
00539*	57	VCE = (HER-HEO)*RF**2*PI + TEMP2+TEMP1	63320
00540*	58	IF (NSUBMG.EQ.0 .OR. NEND.EQ.1) GO TO 196	
00541*	59	IF (NSUBMG.GT.DELH) GO TO 192	
00542*	60	VCNA = NSUBMG*PI*RF**2	
00543*	61	VCNB = VCE - VCNA	
00544*	62	GO TO 196	
00545*	63	192 IF (NSUBMG.GT.(DELM+HE2)) GO TO 194	
00546*	64	VCNA=DELM*PI*RF**2+((ALITHE**2+3.0*(NSUBMG-DELM)**2)/3.0)*	
00547*		5(NSUBMG-DELM)*DE**2*PI	
00548*	65	VCNB=VCE-VCNA	
00549*	66	GO TO 196	
00550*	67	194 VCNA=DELM*PI*RF**2 + TEMP2+((HE2*RE1+HE1**2+HE2**2)/3.0)*	
00551*		5(NSUBMG-DELM+HE2)*PI	
00552*	68	VCNB=VCE-VCNA	
00553*	69	196 TEM3=DE**2	63330
00554*	70	TEM1=TEM3-1.0	63340
00555*	71	CAE=TEM1**2	63350
00556*	72	CDE=-TEM1*TEM3*RE1*4.0	63360
00557*	73	TEM2=RF**2	63370
00558*	74	TEM4=TEM2*TEM1	63380
00559*	75	TEM4=(TEM3**2+TEM3)*HEO**2+TEM4	63390
00560*	76	TEM5=RE1**2	63400
00561*	77	TEM4=TEM4-TEM5*TEM3	63410
00562*	78	CCCE=(TEM3**2+TEM5*3.0+TEM4)*2.0	63420
00563*	79	CCVE=(TEM3**2-TEM3)*2.0	63430
00564*	80	TEM4=TEM2*TEM3	63440
00565*	81	CUCE=((HEO**2+TEM5)*TEM3**2+TEM4)*RE1*4.0	63450
00566*	82	CDE=4.0*RE1*TEM3**2	63460
00567*	83	TEM4=TEM2**2+(TEM5-HEO**2)*TEM3*TEM2*2.0	63470
00568*	84	CECE=TEM4+(TEM5+HEO**2)**2*TEM3**2	63480
00569*	85	CEVE=(HEO**2*TEM3+TEM5*TEM3+TEM2)*TEM3*2.0	63490
00570*	86	WRITE(6,200)	63520
00571*	87	200 FORMAT(RE1,12X,5HALFEM,10X,4HALFE,11X,3HRE2,12X,3HHE1,12X,	63530
00572*		3HHE2,12X,3HHE0,11X,3HHER)	63540
00573*	68	WRITE(6,210)RE1,ALFEM,ALFE,RE2,HE1,HE2,HEO,HER	63550

I N D E X

SUBROUTINE ENDCSUB(1ER)

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00574*	89		WRITE(6,220)	63560
00575*	90	220	FORMAT(6H VFEO,11X,3HVCE,12X,5HTAUED,10X,5HTAUET,10X,3HCAE,	63570
00576*			X12X,3HCBF,12X,4HCCCE,10X,4HCCVE)	63580
00577*	91		WRITE(6,210)VFEO,VCE,TAUED,TAUET,CAE,CBE,CCCE,CCVE	63590
00578*	92		WRITE(6,230)	63600
00579*	93	230	FORMAT(6H CDCE,11X,4HCDVE,11X,4HCECE,11X,4HCEVE)	63610
00580*	94		WRITE(6,240)CDCE,CUVE,CECE,CEVE	63620
00581*	95	240	FORMAT(1X,4(1PE15,7),/)	63630
00582*	96	210	FORMAT(1X,7(1PE15,7),1PE14,7)	63640
00583*	97		RETURN	63650
00584*	98		END	

SYMBOL		REFERENCES									
10	-	13AK	14								
20	-	15AK	16								
30	-	19	19	20							
40	-	20AK	21								
50	-	19	23								
60	-	23	24								
70	-	24AK	25								
80	-	23	23	27							
90	-	27	27	28							
100	-	28	29								
110	-	29AK	30								
120	-	27	28	28	32						
130	-	33	33	34							
140	-	33	38								
150	-	37	41								
160	-	44	44	45							
170	-	44	47								
175	-	43	49								
180	-	46	48	50							
190	-	53									
192	-	59	63								
194	-	63	67								
196	-	58	62	66	69						
200	-	86AK	87								
210	-	88AK	91AK	96							
220	-	89AK	90								
230	-	92AK	93								
240	-	94AK	95								
ABS	-	28									
ACOS	-	32									
AER	-	32	33	34							
AFF	-	8CO									
AINC	-	4CO									
AJPP	-	8CO									
ALFE	-	6CO	34	38	39	39	39	40	40	88AK	
ALFEM	-	6CO	17	19	33	38	80AK				
ALITBE	-	53	56	64							
ANODM	-	4CO									
AOEM	-	5CO	15AK	17							
BE	-	5CO	15AK	27	28	32	39	39	41	53	56
		64	69								
CAE	-	6CO	71	91AK							
CBE	-	6CO	72	91AK							
CCCE	-	6CO	78	91AK							
CCVE	-	6CO	79	91AK							
CDCE	-	6CO	81	94AK							
CDVE	-	6CO	82	94AK							
CECF	-	6CO	84	94AK							

I N D E X

SUBROUTINE END(SUB) (IER)

CEVE	-	6CO	85=	94WK								
COMP	-	7CO										
COMT	-	8CO										
CONSTS	-	2CO										
COS	-	39	39	39	40							
DEI	-	5CO	15WK	18								
DELH	-	10CO	15WK	43	49	59	63	64	64	64	67	
		67										
DELL	-	7CO	50=									
DLRF	-	3CO	50									
ENDCSU	-	1EY										
GNOT	-	2CO										
HE1	-	6CO	36=	40=	42	51	55	88WK				
HE2	-	6CO	41=	42	56	56	63	67	88WK			
HEO	-	6CO	42=	44	45	49	54	57	75	81	83	
		84	85	88WK								
HER	-	6CO	45=	47=	49=	57	88WK					
HSUBMG	-	7CO	59	60	63	64	64	67				
IER	-	1AG	12=	22=	26=	31=						
INPUTC	-	3CO										
NEND	-	7CO	15WK	43	58							
HSUBMG	-	7CO	58									
PARMAC	-	7CO										
PARMAI	-	10CO										
PARMAI	-	11CO										
PI	-	2CO	55	56	57	60	64	64	67	67		
RAVIAN	-	2CO	17									
RE1	-	6CO	18=	23	32	32	32	35	40	51	52	
		55	55	67	67	72	76	81	82	88WK		
RE2	-	6CO	35=	39=	40	41	51	55	55	67	67	
		88WK										
RF	-	4CO	23	32	39	41	44	47	50	52	53	
		57	60	64	67	73						
RI	-	4CO	44	47								
SIN	-	4G										
SQRT	-	32	39	41	51	52						
TAU	-	8CO	54=									
TAUL1	-	6CO	51=	91WK								
TAUL0	-	6CO	52=	91WK								
TEM1	-	7C=	71	72	74							
TEM2	-	73=	74	80	83	83	85					
TEM3	-	69=	70	72	75	75	77	78	79	79	80	
		81	82	83	84	85	85	85				
TEM4	-	74=	75=	75	77=	77	78	80=	81	83=	84	
TEM5	-	76=	77	78	81	83	84	85				
TEMP1	-	55=	57									
TEMP2	-	56=	57	67								
VCE	-	6CO	57=	61	65	68	91WK					
VCNA	-	11CO	60=	61	64=	65	67=	68				
VCNB	-	11CO	61=	65=	68=							

I N D E X

SUBROUTINE END(S611ER)

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VFED	=	6CU	91AR
VFHA	=	11CU	
VFHB	=	11CU	
WOKKA	=	4CU	
WOKKDE	=	5CU	
WOKKRE	=	6CU	
XBARIN	=	8CU	

SUBROUTINE IDN

00585*	1	SUBROUTINE IDN
00586*		INTERNAL BALLISTICS MODULE MAIN ROUTINE
00587*		
00588*	2	COMMON/BLKJ31/ PRIC,PTIME,PRTISS,PRTITU,PRTISP,PRTIST
00589*	3	COMMON/CONS15/GNOT,PI,RADIAN
00590*	4	COMMON/INPUT1/AINCIN(18),AND(18),KF(18,8),KI(18,8),TAUW
00591*	5	COMMON/INPUT4/NGFO(18),APORT(18), RPL(50,18),ALPPL(50,18),
00592*	1	TAUHD(50),ABHD(50),APRTSC(18,8),TAUH(50),AHN(50),NGLOHD,NGEOMN
00593*	6	COMMON/INPUTA/DTAUL,DH1,DH2,AOHM,HHR
00594*	7	COMMON/INPUTD/AKRH,AFRH
00595*	8	COMMON/INPUTE/AGG(5),AKG(5),AKR(39),AKSLOT(2),NAKR,TIMAKR(25),
00596*	1	TBLAKR(25),NAKEND,TAB1(25,8),TABD(25,8),NTAB(8)
00597*	9	COMMON/INPUTF/NPH,PHSI(70),TIMEPH(70),PCTAB
00598*	10	COMMON/INPUTG/CSTAR,GAMA,R,RCSTR,PRESS(20),CSTR(20),GAMAG(20),
00599*	1	AMWG(20),TCUMB(20),NCSCUL
00600*	11	COMMON/INPUTH/VCHINP,VCHINP
00601*	12	COMMON/INPUTI/AN2,CH,DE,DT,ANH
00602*	13	COMMON/INPUTJ/NDT,TIMLOT(25),TDELDT(25),ERBAR,EREXP,PONBAR
00603*	14	COMMON/INPUTK/HCM,TOLCH(50),TIMECH(50),THAX,CKDUMP(80),NPA,
00604*	1	TIMEPA(50),TDLPA(50)
00605*	15	COMMON/INPUTL/PRTFLG
00606*	16	COMMON/INPUTM/STFLAG,STOYST,DELTST,DELTSS,DELTTO
00607*	17	COMMON/INPUTN/ATSI,PST,TST,TIMPT1,TIMPT2,DELTSP,ANITW
00608*	18	COMMON/INPUTO/KPLANL
00609*	19	COMMON/INPUTP/HEPS,TIMEPS(50),EPCL(50),CPCN(50),NACCEL,ACCELT(50),
00610*	1	TIMEAC(50)
00611*	20	COMMON/INPUTR/CRP,CRT,CRW
00612*	21	COMMON/INPUTS/WEACT,RHOTOL,WFIOL
00613*	22	COMMON/INPUTT/SR(18),SLTURN(18),SA(18)
00614*	23	COMMON/INPUTU/DEL,PA,PHI,HCO,DEL2,KDUMP(72)
00615*	24	COMMON/WORKRH/RHI(18),VFHD,VCH,ACK(10)
00616*	25	COMMON/DUHYH/CKTIME,NTEST4
00617*	26	COMMON/DUHYH/AFX,AFY,ALPH1,TAUHW,THOLB
00618*	27	COMMON/CONK/DELT,APH1,WDOT1,ANTRU,TIME6,UT,ANLOPS,ACCEL,
00619*	1	ABCYL,PRNT(101,15),ATNCHI,ANACH,ZCALC(101)
00620*	28	COMMON/CONJ/ABSLTA(18),ABSLIF(18),APA(18),APF(18),PSA(18),
00621*	1	PSF(18),POA(18),POF(18),TSA(18),TSF(18),UA(18),
00622*	2	UF(18),WSLOTD(18),WSLOTI(18)
00623*	29	COMMON/CONK/DWSLTA(18),DWSLIF(18),DWPTS(18),AFHI,RBSLTA(18),
00624*	1	RBSLTI(18),TSLOTA(18),TSLOIF(18)
00625*	30	COMMON/PARKB/AP,PHH,PHAX,WDOT,III,IIJ,WDOTD,NSLOT,NTABE,TOFLAG,
00626*	1	URNOUT,IS,IS1,IS2,HI,SCUR(18,2)
00627*	31	COMMON/PARKF/PH,TIME,ATNCH,IP,DELTA,U,PON,DIS,AMPN,AT,ANH,AKRST
00628*	32	COMMON/PARKF/FP1,PLPO,CFOI,VFWLB,WD,DELD,CLUPS,CFO,WGTUT,
00629*	1	SADGTH
00630*	33	COMMON/PARKK/RBSLOT,KSLOTA,KSLOTF,SLTILG
00631*	34	COMMON/PARKS/ICHH
00632*	35	COMMON/PARKAB/HSUBHG,NSUBHG,REND
00633*	36	COMMON/PARMAC/DELH
00634*	37	COMMON/PARNAH/VH02SB,THETEX,SIRATC,NCOHT

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00635*	38	COMMON/AFTADJ/TAUAFI(25),TENAFI(25),NAKAFI
00636*	39	COMMON/SECTOR/HSCTRS
00637*	40	COMMON/WORK4B/TAUADJ(10,8)
00638*	41	P1 = 3.1415926536
00639*	42	GNOT = 32.174050
00640*	43	RADIAN = 57.2957795
00641*	44	ACCEL=0.0
00642*	45	AFX=0.0
00643*	46	AFY=0.0
00644*	47	ANIBO=0.0
00645*	48	ANITW=1.0
00646*	49	ANIB=1.0
00647*	50	BRNOUT=0.0
00648*	51	CKTIME=0.0
00649*	52	PA=14.7
00650*	53	PEPO=1.0
00651*	54	PONDAK=0.0
00652*	55	PRTELG=1
00653*	56	SIRATC=0.0
00654*	57	THELEX=0.0
00655*	58	TOTLAG=0.0
00656*	59	VMOZSB=0.0
00657*	60	WFAL1=0.0
00658*	61	CKP = 0.0
00659*	62	CRT = 0.0
00660*	63	CKW = 0.0
00661*	64	CFOL=0.0
00662*	65	ICNN = 0
00663*	66	I11 = 0
00664*	67	I1J = 0
00665*	68	I15 = 0
00666*	69	I51 = 0
00667*	70	I52 = 0
00668*	71	KPLANE= 0
00669*	72	NAACEL= 0
00670*	73	NAKLID=0
00671*	74	NAKR=0
00672*	75	NCH=0
00673*	76	HCSCOE=1
00674*	77	HCONT=0
00675*	78	HCTR = 0
00676*	79	NOT=0
00677*	80	NEPS = 0
00678*	81	N1 = 0
00679*	82	NPA=0
00680*	83	NPH = 0
00681*	84	NSLOT = 0
00682*	85	NSUBMG=0
00683*	86	NTAB = 0
00684*	87	NSCTRS=1

CC685.	88	DO 5 I=1,18
CC686.	89	AINC(I)=0.0
CC687.	90	AND(I)=0.0
CC688.	91	DO 2 J=1,8
CC689.	92	TAUADJ(I,J)=0.0
CC690.	93	RF(I,J)=0.0
CC691.	94	2 RI(I,J)=0.0
CC692.	95	NGEO(I)=0
CC693.	96	APORT(I)=0.0
CC694.	97	SA(I)=0.0
CC695.	98	SB(I)=0.0
CC696.	99	TBF(I)=0.0
CC697.	100	UF(I)=0.0
CC698.	101	DWSTF(I)=0.0
CC699.	102	DWSTA(I)=0.0
CC700.	103	RWSTF(I)=0.0
CC701.	104	RWSTA(I)=0.0
CC702.	105	TSLTF(I)=0.0
CC703.	106	TSLTA(I)=0.0
CC704.	107	5 SLTBKN(I)=0.0
CC705.	108	DO 10 I=1,50
CC706.	109	TAUHD(I)=0.0
CC707.	110	ABHD(I)=0.0
CC708.	111	TAUN(I)=0.0
CC709.	112	10 AUN(I)=0.0
CC710.	113	DO 15 I=1,18
CC711.	114	DO 15 J=1,50
CC712.	115	RPL(J,I)=0.0
CC713.	116	ALPPL(J,I)=0.0
CC714.	117	15 CONTINUE
CC715.	118	BTAOE=0.0
CC716.	119	DHI=0.0
CC717.	120	HHR=0.0
CC718.	121	AKRH=0.0
CC719.	122	AKRN=0.0
CC720.	123	AKRST=0.0
CC721.	124	DELH=0.0
CC722.	125	DO 25 I=1,5
CC723.	126	AKG(I)=0.0
CC724.	127	25 AKU(I)=0.0
CC725.	128	DO 30 I=1,39
CC726.	129	30 AKR(I)=0.0
CC727.	130	DO 35 I=1,2
CC728.	131	35 AKSLOT(I)=0.0
CC729.	132	PCTAB=0.0
CC730.	133	PTIME = 0.0
CC731.	134	VCHINP=0.0
CC732.	135	VCHINP=0.0
CC733.	136	VFNO=0.0
CC734.	137	TIMAX=0.0

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00735.	138	STFLAG=C.0
00736.	139	SIDYST=0.0
00737.	140	SLTFLG=J.0
00738.	141	DELTST=0.0
00739.	142	DELTSS=J.0
00740.	143	DELTTO=C.0
00741.	144	ALTST=C.0
00742.	145	PST=0.0
00743.	146	TST=0.0
00744.	147	TIMPT1=J.0
00745.	148	TIMPT2=0.0
00746.	149	DELTSP=0.0
00747.	150	DO 40 I=1,72
00748.	151	40 KDUMP(1)=0
00749.	152	DO 45 I2=1,8
00750.	153	45 NTAH(12)=0
00751.	154	NAKFT=C
00752.	155	NGEOMN=C
00753.	156	NGEOMD=C
00754.	157	CALL INPT
00755.	158	CALL MNCHN1
00756.	159	IF(INCONT.GT.0)CALL NSCE(1)
00757.	160	CALL MNCHN4
00758.	161	RETURN
00759.	162	END

SYMBOL

REFERENCES

2	-	91	94*
5	-	88	107*
10	-	108	112*
15	-	113	114 117*
25	-	125	127*
30	-	128	129*
35	-	136	131*
40	-	150	151*
45	-	152	153*
ABCYL	-	27C0	
ABHD	-	5C0	110*
ABH	-	5C0	112*
ABSLTA	-	28C0	
ABSLTF	-	28C0	
ACCLL	-	27C0	44*
ACCLLT	-	19C0	
ACK	-	24C0	
AFHI	-	29C0	
AFTADJ	-	30C0	
AFX	-	26C0	45*
AFY	-	26C0	46*
AINCHI	-	27C0	
AINCIN	-	4C0	89*
AINCW	-	31C0	
AITSI	-	17C0	144*
AKG	-	8C0	126*
AKR	-	8C0	129*
AKRH	-	7C0	121*
AKRH	-	7C0	122*
AKRST	-	31C0	123*
AKSLUT	-	8C0	131*
AKU	-	8C0	127*
ALPHI	-	26C0	
ALPPL	-	5C0	116*
ASACH	-	27C0	
AMPN	-	31C0	
AMN	-	31C0	
AMNG	-	15C0	
AN2	-	12C0	
ANIBU	-	27C0	47*
ANITW	-	17C0	48*
ANLUPS	-	27C0	
AIN	-	12C0	49*
ANO	-	4C0	90*
ADHH	-	6C0	
AP	-	30C0	
APA	-	28C0	
APF	-	28C0	

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APHI	=	27C0	
APORT	=	5C0	96=
APRTSC	=	5C0	
AT	=	31C0	
BH	=	6C0	
BLK031	=	2C0	
BRNOUT	=	36C0	50=
BTAOL	=	6C0	118=
CF0	=	32C0	
CFOL	=	32C0	64=
CKDUMP	=	14C0	
CKTIME	=	25C0	51=
CLOPS	=	32C0	
CM	=	12C0	
CUMA	=	27C0	
COMJ	=	28C0	
CORA	=	29C0	
CONSTS	=	3C0	
CRP	=	20C0	61=
CRT	=	20C0	62=
CRA	=	20C0	63=
CSTAR	=	10C0	
CSTR	=	10C0	
DE	=	12C0	
DEED	=	32C0	
DELF	=	23C0	
DELM	=	36C0	124=
DELT	=	27C0	
DELTA	=	31C0	
DELTSP	=	17C0	149=
DELTSS	=	16C0	142=
DELTST	=	16C0	141=
DELTO	=	16C0	143=
DELZ	=	23C0	
DHI	=	6C0	119=
DIS	=	31C0	
DT	=	12C0	
DJMYM	=	25C0	
DUMYP	=	26C0	
DADTS	=	29C0	
DASLTA	=	29C0	102=
DASLIF	=	29C0	101=
EPI	=	32C0	
EPCA	=	19C0	
EPCN	=	19C0	
ERBAH	=	13C0	
EREXP	=	13C0	
F	=	32C0	
GAMA	=	10C0	
GAMAG	=	10C0	

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GNOT	-	3CO	42=								
HCO	-	23CO									
HHR	-	6CO	120=								
MSUBHG	-	35CO									
1	-	88	89	90	92	93	94	95	96	97	98
		99	100	101	102	103	104	105	106	107	108
		109	110	111	112	113	114	115	116	125	127
		128	129	130	131	150	151				
12	-	152	153								
18M	-	1EY									
1CHN	-	34CO	65=								
111	-	30CO	66=								
11J	-	30CO	67=								
11S	-	30CO	68=								
INPT	-	157									
INPUT1	-	4CO									
INPUT4	-	5CO									
INPUTA	-	6CO									
INPUTD	-	7CO									
INPUTE	-	8CO									
INPUTF	-	9CO									
INPUTG	-	10CO									
INPUTH	-	11CO									
INPUTI	-	12CO									
INPUTJ	-	13CO									
INPUTK	-	14CO									
INPUTL	-	15CO									
INPUTM	-	16CO									
INPUTN	-	17CO									
INPUTO	-	18CO									
INPUTP	-	19CO									
INPUTQ	-	20CO									
INPUTR	-	21CO									
INPUTT	-	22CO									
INPUTU	-	23CO									
151	-	30CO	69=								
152	-	30CO	70=								
J	-	91	92	93	94	114	115	116			
KDUMP	-	23CO	151=								
KPLANE	-	18CO	71=								
MNCHN1	-	158									
MNCHN4	-	160									
MACCEL	-	19CO	72=								
MAKFT	-	38CO	154=								
MAKEND	-	8CO	73=								
MAKR	-	8CO	74=								
NCM	-	14CO	75=								
NCUNT	-	37CO	77=	159							
NCSCUE	-	10CO	76=								
NCSTR	-	10CO	78=								

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SUBROUTINE IOM

PAGE 44

NDT	-	13C0	79#
NEND	-	35C0	
NLPS	-	19C0	80#
NGEO	-	5C0	95#
NGLOHD	-	5C0	156#
NGEUMH	-	5C0	155#
NI	-	30C0	81#
NPA	-	14C0	82#
NPH	-	9C0	83#
NSCL	-	159	
NSCTHS	-	39C0	87#
NSLOT	-	30C0	84#
NSUBMG	-	35C0	85#
NTAB	-	8C0	153#
NTABL	-	30C0	86#
NTSTH	-	25C0	
P	-	31C0	
PA	-	23C0	52#
PAKMAU	-	35C0	
PAKMAC	-	36C0	
PAKMAH	-	37C0	
PAKMB	-	30C0	
PAKMF	-	31C0	
PAKMK	-	32C0	
PAKMR	-	33C0	
PAKMS	-	34C0	
PCTAB	-	9C0	132#
PLPU	-	32C0	53#
PH	-	31C0	
PHI	-	23C0	
PHST	-	9C0	
PI	-	3C0	41#
PHAX	-	30C0	
PHIN	-	30C0	
POA	-	28C0	
POF	-	28C0	
PON	-	31C0	
PONBAH	-	13C0	54#
PRESS	-	10C0	
PRIC	-	2C0	
PRNT	-	27C0	
PRTFLG	-	15C0	55#
PRTISP	-	2C0	
PRTISS	-	2C0	
PRTIST	-	2C0	
PRTILO	-	2C0	
PSA	-	28C0	
PSF	-	28C0	
PST	-	17C0	145#
PTIME	-	2C0	133#

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PAGE 45

R	-	10C0	
RADIAN	-	3C0	43#
RBSLOT	-	33C0	
RBSLTA	-	29C0	104#
RBSLTF	-	29C0	103#
RF	-	4C0	93#
RHOTUL	-	21C0	
R1	-	4C0	94#
RNI	-	25C0	
RPL	-	5C0	115#
RSLUTA	-	33C0	
RSLUTF	-	33C0	
SA	-	22C0	97#
SB	-	22C0	98#
SCUR	-	36C0	
SECTOR	-	39C0	
SINATE	-	37C0	56#
SLTGMN	-	22C0	107#
SLTFLG	-	33C0	140#
STDYST	-	16C0	139#
STFLAG	-	16C0	138#
SWDUTN	-	32C0	
T	-	31C0	
TABD	-	8C0	
TABI	-	8C0	
TAUADJ	-	46C0	92#
TAUAFI	-	38C0	
TAUHD	-	5C0	109#
TAUMA	-	26C0	
TAUN	-	5C0	111#
TAUA	-	4C0	
TBLAKR	-	8C0	
TBLCT	-	14C0	
TBLPA	-	14C0	
TQMB	-	16C0	
TDELDI	-	13C0	
TEHAFT	-	38C0	
THETEX	-	37C0	57#
THOLD	-	26C0	
TIMAKR	-	8C0	
TIMAX	-	14C0	137#
TIME	-	31C0	
TIMEAC	-	19C0	
TIMECH	-	14C0	
TIMEUT	-	13C0	
TIMEPA	-	14C0	
TIMLPH	-	9C0	
TIMEPS	-	19C0	
TIMEW	-	27C0	
TIMPTI	-	17C0	147#

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PAGE 46

TIMPT2	-	17C0	148#
TOFLAG	-	30C0	58#
TSA	-	28C0	
TSF	-	28C0	99#
TSLOTA	-	29C0	106#
TSLOTF	-	29C0	105#
TSI	-	17C0	146#
U	-	31C0	
UA	-	28C0	
UF	-	28C0	100#
UT	-	27C0	
VCHINP	-	11C0	134#
VCN	-	24C0	
VCHINP	-	11C0	135#
VEND	-	24C0	136#
VFWEB	-	32C0	
VNOZSB	-	37C0	59#
WU	-	32C0	
WDOT	-	30C0	
WDOTU	-	30C0	
WDOTI	-	27C0	
WFACT	-	21C0	60#
WFTOL	-	21C0	
WGTOT	-	32C0	
WORK4B	-	40C0	
WORKRH	-	24C0	
WSLOTU	-	28C0	
WSLOTI	-	28C0	
ZCALC	-	27C0	

00810*	32	FVACX=FVAC	11480
00811*	33	FVAC=CFOL*PON*AT*AHN	11490
00812*	34	IF (TIME) 160,160,170	11500
00813*	35	160 FVACX=0.0	11510
00814*	36	AITVAC=0.0	11520
00815*	37	170 CONTINUE	11530
00816*	38	AITVAC=AITVAC+(FVAC+FVACX)*DELT/2.	11540
00817*	39	IF (TIME,LT,1.0E-06) AITVAC=0.0	11550
00818*	40	ABTOT=ABTOT+ABSLOT	11610
00819*	41	VFCYL=VF-VFN-VFN	11670
00820*	42	CALL INERT	
00821*	43	KPRINT=1	
00822*	44	180 CALL PRT7	
00823*	45	IF (TIME,LT,PTIME) GO TO 490	
00824*	46	PTIMEV = TIME	
00825*	47	IF (PRTFLG,EQ,0.0) GO TO 490	
00826*	48	IF (PRTFLG-2.) 295,260,260	
00827*	49	260 CGCYL=ADMCYL/(DELF*VFCYL)	
00828*	50	XBARIH=((XBH+HCO)*VFN*DELF+ADMCYL)-VFN*DELF*XBN)/WF	11970
00829*	51	AJPP=AJPHEO+AIPCYL+AJPNOZ	11980
00830*	52	AJBHED=AJBHED-((XBH+HCO)*2-(XBH+HCO-XBARIH)*2)*VFN*DELF/GNOT	11990
00831*	53	AJBNOZ=AJBNOZ-(XBN*2-(XBN+XBARIH)*2)*VFN*DELF/GNOT	12000
00832*	54	TEMP=WF-(VFN+VFN)*DELF	12010
00833*	55	TEMP1=(XBH+HCO)*DELF*VFN	12020
00834*	56	TEMP2=XBN*DELF*VFN	12030
00835*	57	AIBCYL=AIBCYL-((XBARIH*WF-TEMP1+TEMP2)/TEMP)*2*TEMP/GNOT	12040
00836*	58	AJBB=AJBHED+AIBCYL+AJBNOZ	12050
00837*	59	WRITE(10UT,270)	
00838*	60	270 FORMAT('CENTER OF GRAVITY AND MOMENT OF INERTIA DATA:')	
00839*	61	TERM = XBARIH * A1	
00840*	62	WRITE(10UT,271) TERM,XBARIH	
00841*	63	271 FORMAT('4, 'GRAIN CG (M,IN)',T51,'XBARIH',	
00842*		\$ T66,G15,B,T86,G15,B)	
00843*	64	TERM = AJPP * A2	
00844*	65	WRITE(10UT,272) TERM,AJPP	
00845*	66	272 FORMAT('4, 'GRAIN ROLL MOI (KG*M**2,SLUG*IN**2)',T51,'AJPP',	
00846*		\$ T66,G15,B,T86,G15,B)	
00847*	67	TERM = AJBB * A2	
00848*	68	WRITE(10UT,273) TERM,AJBB	
00849*	69	273 FORMAT('4, 'GRAIN XY MOI (KG*M**2,SLUG*IN**2)',T51,'AJBB',	
00850*		\$ T66,G15,B,T86,G15,B)	
00851*	70	TERM = XBH * A1	
00852*	71	WRITE(10UT,274) TERM,XBH	
00853*	72	274 FORMAT('4, 'HEAD END CG (M,IN)',T51,'XBH',	
00854*		\$ T66,G15,B,T86,G15,B)	
00855*	73	TERM = AJPHEO * A2	
00856*	74	WRITE(10UT,275) TERM,AJPHEO	
00857*	75	275 FORMAT('4, 'HEAD END ROLL MOI (KG*M**2,SLUG*IN**2)',T51,'AJPHEO',	
00858*		\$ T66,G15,B,T86,G15,B)	
00859*	76	TERM = AJBHED * A2	

00860*	77	WRITE(10UT,276) TERM,AJBHED	
00861*	78	276 FORMAT(14,'HEAD END XY MOI (KG*M**2,SLUG*IN**2)',T51,'AJBHED',	
00862*		\$ 166,G15.8,186,G15.8)	
00863*	79	TERM = CGCYL * A1	
00864*	80	WRITE(10UT,277) TERM,CGCYL	
00865*	81	277 FORMAT(14,'CYLINDER CG (M,IN)',T51,'CGCYL',	
00866*		\$ 166,G15.8,186,G15.8)	
00867*	82	TERM = A1PCYL * A2	
00868*	83	WRITE(10UT,278) TERM,A1PCYL	
00869*	84	278 FORMAT(14,'CYLINDER ROLL MOI (KG*M**2,SLUG*IN**2)',T51,'A1PCYL',	
00870*		\$ 166,G15.8,186,G15.8)	
00871*	85	TERM = A1BCYL * A2	
00872*	86	WRITE(10UT,279) TERM,A1BCYL	
00873*	87	279 FORMAT(14,'CYLINDER XY MOI (KG*M**2,SLUG*IN**2)',T51,'A1BCYL',	
00874*		\$ 166,G15.8,186,G15.8)	
00875*	88	TERM = XBN * A1	
00876*	89	WRITE(10UT,280) TERM,XBN	
00877*	90	280 FORMAT(14,'AFT END CG (M,IN)',T51,'XBN',	
00878*		\$ 166,G15.8,186,G15.8)	
00879*	91	TERM = AJPN0Z * A2	
00880*	92	WRITE(10UT,281) TERM,AJPN0Z	
00881*	93	281 FORMAT(14,'AFT END ROLL MOI (KG*M**2,SLUG*IN**2)',T51,'AJPN0Z',	
00882*		\$ 166,G15.8,186,G15.8)	
00883*	94	TERM = AJBN0Z * A2	
00884*	95	WRITE(10UT,282) TERM,AJBN0Z	
00885*	96	282 FORMAT(14,'AFT END XY MOI (KG*M**2,SLUG*IN**2)',T51,'AJBN0Z',	
00886*		\$ 166,G15.8,186,G15.8)	
00887*	97	IF(PRTFLG.EQ.2.) GO TO 490	
00888*	98	295 CONTINUE	12090
00889*		C*****PRINT HEADING TITLE FOR EXPANDED PRINT*****	12100
00890*	99	IF(PRTFLG.LT.2.) WRITE(10UT,283)	
00891*	100	283 FORMAT(1H1)	
00892*	101	WRITE(10UT,284)	
00893*	102	284 FORMAT(1Z2,'INCREMENT DIVIDING PLANE DATA:')	
00894*		C*****PRINT SUMMARY OF FORE HEAD DATA*****	12110
00895*	103	WRITE(10UT,300)(PRNT(1,L),L=1,7),(PRNT(1,L),L=9,15)	12120
00896*	104	300 FORMAT(1H6,2X,4HMASS,6X,2HPD,4X,1HP,8X,1HT,8X,1HU,8X,1HM,7X,2HLP,7	12130
00897*		XA,2HAP,6X,4HWDOT,5X,5HWDOT,4X,5HWD/D1,5X,2HRD,5X,3HTAU,4X,4HNBTO,	12140
00898*		X3A,5HTAU/1H,	12150
00899*		X 6HADDITION/1H,7HREGIONS,4X,4HPSIA,5X,4HPSIA,4X,6HDEG. R,3X,6HFT	12160
00900*		X/SEC,12X,6HINCHES,3X,7HSQ. IN.,2X,6HLB/SEC,3X,6HLB/SEC,3X,6HLB/SEC	12170
00901*		X,3X,6HIN/SEC,3X,3HIN.,3X,6HIN/SEC,3X,3HIN.,/(3X,4HFORE,2X,4F9.2,	12180
00902*		X2X,F7.3,5F4.2,F8.4,F7.3,F8.4,F7.3))	
00903*	105	115=1	12210
00904*	106	J=2	12220
00905*	107	310 DO 350 K=J,NI	12230
00906*	108	TEMP=SCUR(115,1)-TSL0TF(115)	
00907*	109	IF(2CALK(K)-TEMP 1340,320,320	
00908*	110	320 CONTINUE	12260
00909*	111	WRITE(6,330)SCUR(115,1),(PRNT(K,L),L=1,7),(PRNT(K,L),L=9,15)	12270

SUBROUTINE IDHOUT(IE)

00910*	112	330	FORMAT(1X,F8.3,4F9.2,2X,F7.3,5F9.2,F8.4,F7.3,F8.4,F7.3/)	
00911*	113		GO TO 360	12290
00912*	114	340	CONTINUE	12300
00913*	115		WRITE(6,400)ZCALC(K), (PRNT(K,L),L=1,7),(PRNT(K,L),L=9,15)	12310
00914*	116	350	CONTINUE	12320
00915*	117		K = N1	12330
00916*	118	360	IF(K-N1)370,370,410	12340
00917*	119	370	K=K+1	12350
00918*	120		TEMP=SCUR(115,2)+TSLOT(1,5)	
00919*	121		IF(K-N1)300,380,410	12370
00920*	122	380	IF(ZCALC(K)-TEMP 1370,395,390	
00921*	123	390	K=K-1	12390
00922*	124	395	CONTINUE	12400
00923*	125		WRITE(6,400)SCUR(115,2),(PRNT(K,L),L=1,7),(PRNT(K,L),L=9,15)	12410
00924*	126	400	FORMAT(1X,F8.3,4F9.2,2X,F7.3,5F9.2,F8.4,F7.3,F8.4,F7.3/)	
00925*	127		J=K+1	12430
00926*	128		115=115+1	12440
00927*	129		GO TO 310	12450
00928*			C*****PRINT SUMMARY OF AFT END DATA*****	12460
00929*	130	410	IF(NSUBMG.LE.0) GO TO 415	
00930*	131		WRITE(6,410) (PRNT(NIP1,1),1=1,5),PRNT(NIP1,7),(PRNT(NIP1,1),1=9,1	
00931*			53)	
00932*	132	416	FORMAT(1X,'AFT(A)',2X,4F9.2,2X,F7.3,'',4F9.2,F8.4,F7.3,	
00933*			X14H)	
00934*	133		N1P2=N1+2	
00935*	134		WRITE(6,417) (PRNT(NIP2,1),1=1,5),PRNT(NIP2,7),(PRNT(NIP2,1),1=9,13	
00936*			5)	
00937*	135	417	FORMAT(1X,'AFT(B)',2X,4F9.2,2X,F7.3,'',4F9.2,F8.4,F7.3,	
00938*			X14H//)	
00939*	136		GO TO 425	
00940*	137	415	WRITE(6,420) (PRNT(NIP1,1),1=1,5),PRNT(NIP1,7),(PRNT(NIP1,1),1=9,13	12470
00941*			X)	12480
00942*	138	420	FORMAT(4X,3HAFT,2X,4F9.2,2X,F7.3,4H',4F9.2,F8.4,F7.3,	
00943*			X14H//)	
00944*	139	425	IF(SCUR(1,1).GT.1.0E36)GO TO 490	
00945*			C*****PRINT SUMMARY OF SLOT DATA*****	12520
00946*	140		DO 430 I=1,NSLOT	12530
00947*	141		SKF(I)=SCUR(I,1)	12540
00948*	142	430	SKA(I)=SCUR(I,2)	12550
00949*	143		WRITE(6,435)	
00950*	144	435	FORMAT(1X)	
00951*	145		WRITE(6,440)	12560
00952*	146	440	FORMAT(13X,4HSLOT/,11X,9HINTERFACE,6X,2HP0,9X,1HP,10X,1HT,10X,1HU,	12570
00953*			X16X,2HAP,7X,5HWDOT,8X,2HAB,9X,2HKB,8X,5HDELTA,6X,5HWSLOT/	
00954*			X 12X,BULOCATION,115,3HTAU/	
00955*			X 14X,3HIN,8X,4HPS1A,7X,4HPS1A,6X,6HDLG, R,5X,6HFT/SEC,5X,7HSQ	12590
00956*			X, 1H,4X,6HLB/SEC,5X,7HSQ, 1H,4X,6HIN/SEC,7X,3HIN,6X,6HLB/SEC//)	12600
00957*	147		DO 470 I=1,NSLOT	12610
00958*	148		WRITE(6,450)SKF(I),POI(I),PSF(I),TSF(I),UF(I),APF(I),DWSLTF(I), A	12620
00959*			XBSLTF(I),KBSLTF(I),TSLOT(I),NSLOT(I)	12630

SUBROUTINE IDROUT(IE)

CCY60*	149	450	FORMAT(IX,HHFOREWARD,2X,11(IPE11.4))	12640
CCY61*	150		WRITE(6,460)SKA(1),POA(1),PSA(1),ISA(1),UA(1),APA(1),DWSLTA(1), A	12650
CCY62*			XBSLTA(1),RBSLTA(1),ISLOTA(1),WSLTD(1)	12660
CCY63*	151	460	FORMAT(IX,SHAFT,7X,11(IPE11.4))	12670
CCY64*	152	470	WRITE(6,480)DWDT5(1)	12680
CCY65*	153	480	FORMAT(IX,'GAS BUILDUP IN SLOT, DW/DT =',IPE11.4//)	
CCY66*	154	490	IF(IE.EQ.2)GO TO 780	12700
CCY67*	155		IF(KPRNT.EQ.2) GO TO 780	
CCY68*	156		DELTSV=DELT	
CCY69*	157	500	CALL HOUTSUB(IE)	12720
CCY70*	158		IF(ICHN.EQ.5) RETURN	12730
CCY71*	159		IF(DELTSV.NE.DELT) GO TO 800	
CCY72*	160	780	CONTINUE	13330
CCY73*	161		IF(TIME.LT.PTIME) GO TO 790	
CCY74*	162		PTIME=PTIME + PRIC	
CCY75*	163	790	TIME = TIME + DELT	
CCY76*	164		RTURN	13350
CCY77*	165	800	PTIME = TIME	
CCY78*	166		IF(PTIME.EQ.PTIMSV) GO TO 780	
CCY79*	167		KPRNT = 2	
CCY80*	168		GO TO 100	
CCY81*	169		END	

I N D E X

SUBROUTINE ROUTINES

SYMBOL

REFERENCES

130	-	33*			
160	-	34	34	35*	
170	-	34	37*		
180	-	44*	168		
260	-	48	48	49*	
270	-	59WK	60*		
271	-	62WK	63*		
272	-	65WK	66*		
273	-	68WK	69*		
274	-	71WK	72*		
275	-	74WK	75*		
276	-	77WK	78*		
277	-	80WK	81*		
278	-	83WK	84*		
279	-	86WK	87*		
280	-	89WK	90*		
281	-	92WK	93*		
282	-	95WK	96*		
283	-	99WK	100*		
284	-	101WK	102*		
295	-	48	98*		
300	-	103WK	104*		
310	-	107*	127		
320	-	109	107	110*	
330	-	111WK	112*		
340	-	109	114*		
350	-	107	116*		
360	-	113	118*		
370	-	118	110	119*	122
380	-	121	121	122*	
390	-	122	123*		
395	-	122	124*		
400	-	115WK	125WK	126*	
410	-	118	121	130*	
415	-	130	137*		
416	-	131WK	132*		
417	-	134WK	135*		
420	-	137WK	138*		
425	-	136	139*		
430	-	140	142*		
435	-	143WK	144*		
440	-	145WK	146*		
450	-	148WK	149*		
460	-	150WK	151*		
470	-	147	152*		
480	-	152WK	153*		
490	-	45	47	97	139 154*
500	-	157*			

COMA	-	9C0								
COMB	-	10C0								
COMC	-	11C0								
COMI	-	12C0								
COMJ	-	13C0								
COMK	-	14C0								
COML	-	15C0								
CONSTS	-	4C0								
CSTAR	-	5C0								
CSTR	-	5C0								
DE	-	6C0								
DEED	-	21C0								
DELF	-	8C0	49	50	50	52	53	54	55	56
DELT	-	9C0	38	156	159	163				
DELTA	-	18C0								
DELISV	-	3C0	156	159						
DELZ	-	8C0								
DIS	-	18C0								
DT	-	6C0								
DTINT	-	14C0								
DADDT	-	11C0								
DADTS	-	14C0	152WR							
DASLTA	-	14C0	150WR							
DASLTF	-	14C0	148WR							
EPI	-	21C0								
F	-	21C0								
FVAC	-	12C0	32	33	38					
FVACA	-	32	35	38						
GAMA	-	5C0								
GAMAG	-	5C0								
GNOT	-	4C0	52	53	57					
HCO	-	8C0	50	52	52	55				
HSUBMG	-	25C0								
I	-	131WR	131WR	131WR	131WR	134WR	134WR	134WR	134WR	137WR
		137WR	137WR	140	141	141	142	142	147	148WR
		148WR	148WR	148WR	148WR	148WR	148WR	148WR	148WR	148WR
		150WR	150WR	150WR	150WR	150WR	150WR	150WR	150WR	150WR
		152WR								
IBMOUT	-	1EY								
ICHN	-	22C0	158							
IE	-	1AG	154	157AG						
III	-	16C0								
IIJ	-	16C0								
IIS	-	16C0	105	108	108	111WR	120	120	125WR	128
INERT	-	42								
INPUTG	-	5C0								
INPUTI	-	6C0								
INPUTL	-	7C0								
INPUTU	-	8C0								
IOUT	-	28	59WR	62WR	65WR	68WR	71WR	74WR	77WR	80WR
										83WR

I N D E X

SUBROUTINE 18HOUT(IE)

PAGE 57

YPH	-	20CO						
WD	-	21CO						
WDGT	-	16CO						
WDGTD	-	16CO						
WDGTI	-	9CO						
WF	-	23CO	50	54	57			
WGTOT	-	21CO						
WSLTD	-	13CO	150WR					
WSLTI	-	13CO	148WR					
XUAKIH	-	15CO	50	52	53	57	61	62WR
XBH	-	16CO	50	52	52	55	70	71WR
XBN	-	16CO	50	53	53	56	88	89WR
ZCALC	-	9CO	109	115WR	122			

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00982*      1      SUBROUTINE INERT
00983*      C
00984*      C      INERT MASS MODULE (HARRIS)
00985*      C
00986*      C
00987*      C      INITIALIZE MIZ=MITOT AT THE BEGINNING OF EACH CASE
00988*      C
00989*      2      IMPLICIT REAL (A-H,O-Z,M)
00990*      3      COMMON/BLK005/MLW15,NS1,NF,NCASES,NCASE
00991*      4      COMMON/BLK009/MITOT,SII,DELT,HPR,MIZ
00992*      5      COMMON/BLK016/ MFINIT,F1,MIF,MIFZ,MIR,FIZ,AITIN,AITVIN
00993*      6      COMMON/BLK030/ COEINT(5)
00994*      7      COMMON/COMA/DELT,APHI,WDOT1,ANIBU,TINW,UT,ANLOPS,ACCEL,
00995*      1      AUCYL,PRNT(101,15),AINCHI,AMACH,ZCALC(101)
00996*      8      COMMON/PARHF/PH,TIME,AINCW,T,P,DELTA,U,PON,D15,AMPN,AT,AMW,AKRST
00997*      9      COMMON/PARNV/WF
00998*      10     IF(NF.EQ.0) GO TO 10
00999*      11     HPR=WF
01000*      12     IF(TIME.NE.0.0) GO TO 5
01001*      13     DELTIN=DELT
01002*      14     MITOT=WF
01003*      C      ADJUST CURVE FIT TO PASS THROUGH (1.0,1.0)
01004*      15     MIRR = COEINT(1) + COEINT(2) + COEINT(3) + COEINT(4) + COEINT(5)
01005*      16     MITOT = MITOT/MIRR
01006*      17     GO TO 20
01007*      18     5 DELTIN = TIME-TIMEZ
01008*      19     GO TO 20
01009*      20     10 DELTIN=DELT
01010*      21     20 HPRR=HPR/MITOT
01011*      22     MIRR=COEINT(1) + COEINT(2)*HPRR + COEINT(3)*HPRR**2
01012*      5     + COEINT(4)*HPRR**3 + COEINT(5)*HPRR**4
01013*      23     MIR = MITOT*MIRR
01014*      24     MIF = (MIZ-MIR)/DELTIN
01015*      25     IF(TIME.LT.DELTIM) MIF=0.0
01016*      26     MFINIT = MFINIT + ((MIF+MIFZ)/2.0)*DELTIN
01017*      27     MIZ = MIR
01018*      28     MIFZ=MIF
01019*      29     F1 = MIF*SII
01020*      30     AITIN = AITIN+0.5*(F1+FIZ)*DELTIN
01021*      31     AITVIN = AITIN
01022*      32     FIZ = F1
01023*      33     IF(NF.NE.0) TIMEZ=TIME
01024*      34     RETURN
01025*      35     END

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SUBROUTINE INERT

SYMBOL	REFERENCES
S	12 18*
10	10 20*
20	17 19 21*
ABCYL	7C0
ACCEL	7C0
AIHCH1	7C0
AIHCH	8C0
AITIN	5C0 30 31
AITVIN	5C0 31*
AKKST	8C0
AHACH	7C0
AMPH	8C0
AMW	8C0
ANIDU	7C0
ANLUPS	7C0
APH1	7C0
AT	8C0
BLK005	3C0
BLK00Y	4C0
BLK016	5C0
BLK030	6C0
COLINT	6C0 15 15 15 15 15 22 22 22 22
COMA	22 7C0
DELT	4C0 20
DELTA	8C0
DELTHH	13 18 20 24 25 26 30
DELT1	7C0 13
DIS	8C0
F1	5C0 29 30 32
F12	5C0 30 32*
INERT	1EY
HPIN1T	5C0 26 26
HIF	5C0 24 25 26 28 29
HIF2	5C0 26 20*
HIR	5C0 23 24 27
HIRK	15 16 22 23
HITOT	4C0 16 16 23
HIZ	4C0 24 27*
HPR	4C0 11 21
HPRK	21 22 22 22 22
HPTOT	14 21
HCASE	3C0
NCASES	3C0
HF	3C0 10 33
NLLWIS	3C0
NSI	3C0
P	8C0

I N D E X

SUBROUTINE INLRT

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PAKMF	=	8CO				
FAKMF	=	9CO				
PH	=	8CO				
PON	=	8CO				
PRNT	=	7CO				
SII	=	4CO	29			
I	=	8CO				
TIME	=	8CO	12	18	25	33
TIMEA	=	7CO				
TIMEZ	=	18	33			
U	=	8CO				
U1	=	7CO				
WDOTI	=	7CO				
WF	=	9CO	11	14		
ZCALC	=	7CO				

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I N D E X

SUBROUTINE INIT1

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01026.	1	SUBROUTINE INIT1
01027.	2	IMPLICIT REAL (A-H,Q-Z,M)
01028.	3	LOGICAL ERR
01029.	4	COMMON/BLK001/ERR,IN
01030.	5	COMMON/BLK009/MITOT,SII,DELT,MPR,MIZ
01031.	6	COMMON/BLK016/ MFINIT,FI,MIF,MIFZ,MIR,FIZ,AITIN,AITVIN
01032.	7	ERR = .FALSE.
01033.	8	MFINIT = 0.0
01034.	9	MIF = 0.0
01035.	10	MIFZ = 0.0
01036.	11	FIZ = 0.0
01037.	12	AITIN = 0.0
01038.	13	RETURN
01039.	14	END

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SYMBOL		REFERENCES	
AITIN	6C0	12	
AITVIN	6C0		
BLKCU1	4C0		
BLKCU9	5C0		
BLKCU16	6C0		
DELT	5C0		
LRR	3LG	4C0	7
F1	6C0		
F1Z	6C0	11	
IN	4C0		
INIT1	1EY		
MFINIT	6C0	8	
MIF	6C0		
MIFZ	6C0	9	
MIN	6C0		
M1101	5C0	10	
M1Z	5C0	10	
MPR	5C0		
S11	5C0		

G1040.	1	SUBROUTINE INPT
G1041.	2	REAL IBN,IBM DA//
G1042.	3	LOGICAL ERR,LISTI,STATIC
G1043.	4	COMMON/BLK001/ERR,IN
G1044.	5	COMMON/BLK005/NLENTS,NSI,NF,NCASLS,NCASE
G1045.	6	COMMON/BLK021/CSCDEF(J),LISTI,STATIC
G1046.	7	COMMON/BLK026/ NIDFLG
G1047.	8	COMMON/BLK031/ PRIC,PTIME,PRTISS,PRITTO,PRISP,PRTIST
G1048.	9	COMMON/BLK033/WFCOR,WFGINT,SUMWFZ,TIMEZZ
G1049.	10	COMMON/CONSTS/GHOT,PI,RADIAN
G1050.	11	COMMON/INPUT1/AINCIN(10),AND(10),RE(10,0),RI(10,0),TAUW
G1051.	12	COMMON/INPUT4/NGEO(10),APORT(10),KPL(50,10),ALPPL(50,10),
G1052.		1 TAUHD(50),ADHD(50),APRTSC(10,0),TAUN(50),ADN(50),NGLQHD,NGEQMN
G1053.	13	COMMON/INPUTA/BTAD,DI,BH,ADHM,MHR
G1054.	14	COMMON/INPUTB/AQNM,UN,DNI
G1055.	15	COMMON/INPUTC/DLRF
G1056.	16	COMMON/INPUTE/AKG(5),AKU(5),AKR(30),AKSLOT(2),NAKR,TIMAKR(25),
G1057.		1 TOLAKR(25),NAKEND,TAB(25,0),TABU(25,0),NTAB(0)
G1058.	17	COMMON/INPUTF/NPH,PHST(70),TIMEPH(70),PCTAB
G1059.	18	COMMON/INPUTG/CSTAK,GAMAR,NCSTR,PRESS(20),CSTR(20),GAMAG(20),
G1060.		1 ANRG(20),TCUMB(20),NCSCUE
G1061.	19	COMMON/INPUTH/VCHINP,VCNINP
G1062.	20	COMMON/INPUTI/ANZ,CN,DE,DT,ANN
G1063.	21	COMMON/INPUTJ/NDT,TIMEDT(25),TDELDT(25),ERBAR,EREXP,PONBAR
G1064.	22	COMMON/INPUTK/NCM,TOLCM(50),TIMECM(50),TIMAX,CKDUMP(80),NPA,
G1065.		1 TIMLPA(50),TBLPA(50)
G1066.	23	COMMON/INPUTL/PRTFLG
G1067.	24	COMMON/INPUTN/STFLAG,STDYST,DELTST,DELTSS,DELTTO
G1068.	25	COMMON/INPUTN/ATST,PST,TST,TIMPT1,TIMPT2,DELTSP,ANITW
G1069.	26	COMMON/INPUTO/KPLANE
G1070.	27	COMMON/INPUTP/NEPS,TIMEPS(50),EPLA(50),EPCN(50),NACCEL,ACCELT(50),
G1071.		1 TIMEAC(50)
G1072.	28	COMMON/INPUTQ/CRP,CRT,CRW
G1073.	29	COMMON/INPUTR/WFACT,RHOTOL,WFIOL
G1074.	30	COMMON/INPUTT/SB(10),SLTBRN(10),SA(10)
G1075.	31	COMMON/INPUTU/DELF,PA,PHI,HCO,DELZ,KDUMP(72)
G1076.	32	COMMON/INPUTV/VFNOA,VFNOB,VCHINA,VCNINB
G1077.	33	COMMON/INPUTW/TAUMNA,TAUMNB
G1078.	34	COMMON/XORRRH/KHI(5),HH2,ACG,HHW,VFHO,VCH,ANK(10)
G1079.	35	COMMON/XORRRH/KHI(10),VFHO,VCN,ACK(10)
G1080.	36	COMMON/PARNB/AP,PHIN,PMAX,WDOT,III,IJJ,WDOTD,NSLOT,NTABE,TOFLAG,
G1081.		1 BRNOUT,IIS,ISI,IS2,NI,SCUR(10,2)
G1082.	37	COMMON/PARNAA/TO,IFLAG
G1083.	38	COMMON/PARNAB/HSUBNG,NSUBMG,NEND
G1084.	39	COMMON/PARNAC/DELH
G1085.	40	COMMON/PARNAD/ABNA(50),ABNB(50)
G1086.	41	COMMON/PARNAG/ TXSUB(20),TRSUB(20),NPSUB
G1087.	42	COMMON/PARNAH/VNOZSB,THETEX,SIRATC,NCNT
G1088.	43	COMMON/PARNAH/ TAIB(50),TA2B(50),TAUNB(50)
G1089.	44	COMMON/AF1ADJ/TAUAF(25),TEHAF(25),NAKAF

G1090.	45	COMMON/WORK47/ALPSEC(18,0),AFNPSC(18,0),TAURP(18,8)
G1091.	46	COMMON/HEADADJ/TAUHED(25),TEHHED(25),NAKHED
G1092.	47	COMMON/TERFAC/SIGMAP,KEFTLM,BLKTEM
G1093.	48	COMMON/SECTOR/NSCTRS
G1094.	49	COMMON/WORK48/TAUADJ(18,8)
G1095.	50	DIMENSION DUMX(50),DUMY(50)
G1096.	51	NAMELIST/IDISP/DELF,AKR,AKSLOT,ERBAR,CSTAR,CSTR,DT,DE
G1097.	52	NAMELIST/IDDATA/
G1098.		C MOTOR CASE AND PROPELLANT GRAIN GEOMETRY FACTORS&
G1099.		SHCO,AINCIN,SA,SH,DELZ,AND,RF,RI,DI,DI1,ADHM,
G1100.		SBTAUE,BN,DNI,ADHM,DLRF,
G1101.		C PROPELLANT PROPERTIES AND BURNING RATE MODEL PARAMETERS&
G1102.		SARG,HHR,AKG,AKR,AKSLOT,SLTBKN,NPH,PHST,TIMEPH,GAMA,R,DELF,CSTAR,
G1103.		STG,NCSTR,PRESS,NAKH,TIMAKR,IBLAKR,NAKEND,TAU1,TAUD,NTAB,AKRH,AKRN,
G1104.		STCONB,AMWG,GAMAG,CSTR,NCSCOE,
G1105.		C NON-STEADY FLOW,STEADY-STATE, AND PROGRAM TIME CONTROL PARAMETERS&
G1106.		STIFLAG,STDYST,DELST,DELTS,S,DELTIU,TIMAX,TST,PST,AITST,ANITW,
G1107.		STIMPT1,TIMPT2,DELISP,PTIME,PTISS,PTI10,PTI1P,PTI1T,
G1108.		C NOZZLE PARAMETERS&
G1109.		S ANZ,CH,DE,DT,ANN,PA,NDT,TIMEDT,DUEDT,NPA,THEPA,TBLPA,
G1110.		S ERBAR,ERLXP,PONBAR,DLH,TAIB,TAZB,TAUNB,
G1111.		S NCH,TULCH,TINECH,HSUBMG,HSUBMG,TAUMNA,TAUMNB,
G1112.		STASUB,TRSUB,NPSUB,THETEX,SIRATC,NCUNT,
G1113.		C GEOMETRY TABLE PARAMETERS&
G1114.		SKPLANE,VCHINP,VCHINP,VFHO,VFNO,NGEOND,NGEODN,
G1115.		S APORT,TAUND,ABND,PHOINH,PHOIND,XCGHD,TAUN,ABN,PHOIN,RMOIN,
G1116.		SXCGH,ALPPL,NGEO,ABNA,ABNB,VFDOA,VFNOB,VCHINA,VCHINB,RPL,
G1117.		SAPRTSC,ALPSEC,NSCTRS,TAUADJ,
G1118.		C MISCELLANEOUS INPUTS&
G1119.		SPRTFLG,PHI,CRP,CRT,CRN,NEPS,PCTAB,TIMEPS,EPCA,EPCN,NACCEL,
G1120.		SACCEL,TIMLAC,CKDUMP,ADUMP,IFACT,RHOTOL,WFTOL,WFCOR,TAUAFT,
G1121.		STEMAFT,NAKAFT,TAUHED,TEHHED,NAKHED,SIGMAP,KEFTLM,BLKTEM
G1122.	53	NIBOUT=20
G1123.	54	DOSJ=1,18
G1124.	55	DOSJ=1,8
G1125.	56	RF(1,J)=0.0
G1126.	57	RI(1,J)=0.0
G1127.	58	APRTSC(1,J)=0.0
G1128.	59	5 ALPSEC(1,J)=0.0
G1129.	60	CALL DATLOC(18N)
G1130.	61	IF(ICASE.GT.0 .AND. NIBFLG.GT.0) GO TO 120
G1131.	62	8 READ(IN,IDDATA,END=100)
G1132.	63	SECH=NSCTRS
G1133.	64	IF(NSCTRS.LT.2)GO TO 17
G1134.	65	DO10 I=1,KPLANE
G1135.	66	DO10 J=2,NSCTRS
G1136.	67	IF(RF(1,J).LT.1.0)RF(1,J)=RF(1,1)
G1137.	68	IF(RI(1,J).LT.1.0)RI(1,J)=RI(1,1)
G1138.	69	IF(APRTSC(1,J).LT.1.0)APRTSC(1,J)=APRTSC(1,1)
G1139.	70	10 CONTINUE

```

C1140*      71      DO161=1,KPLANE
C1141*      72      N=NGLO(1)
C1142*      73      DO12J=1,N
C1143*      74      DUMX(J)=RPL(J,1)
C1144*      75      12 DUMY(J)=ALPPL(J,1)
C1145*      76      DO14J=1,NSECTRS
C1146*      77      X=TAUADJ(1,J)
C1147*      78      CALL XLIN(DUMX,DUMY,N,X,ALP1,50)
C1148*      79      14 ALPSEC(1,J)=ALP1/SECH
C1149*      80      16 CONTINUE
C1150*      81      GO TO 20
C1151*      82      17 DO161=1,KPLANE
C1152*      83      APRTSC(1,1)=APORT(1)
C1153*      84      18 ALPSEC(1,1)=ALPPL(1,1)
C1154*      85      20 CONTINUE
C1155*      86      IF(KPLANE.NE.0) GO TO 22
C1156*      87      WRITE(6,21) KPLANE
C1157*      88      21 FORMAT('ERROR IN INPT *** KPLANL= ',I3)
C1158*      89      STOP
C1159*      90      22 IF(INCSCOE.EQ.0) CSCOE(1)=0.0
C1160*      91      IF(INCSTR.EQ.0) GO TO 25
C1161*      92      IF(10.EQ.0.0) TO=CSTAR**2*GAMA*(2./(GAMA+1.))**
C1162*      93      S((GAMA+1.)/(GAMA-1.))/(32.17405*R)
C1163*      94      IF(CSTAR.EQ.0.0 .AND. CSCOE(1).EQ.0.0)
C1164*      95      S
C1165*      96      CSTAR=SQRT(32.17405*R*TO/(GAMA*(2./(GAMA+1.))**
C1166*      97      S((GAMA+1.)/(GAMA-1.)))
C1167*      98      C INITIALIZE SLOT INTERFACE LOCATIONS( IF ANY INTERFACE LOCATION IS ZERO,
C1168*      99      C EXCEPT SA(1), THEN RESET TO THE UNATTAINABLE VALUE 1.0E37)
C1169*      100      25 IF(SB(1).EQ.0.0) GO TO 40
C1170*      101      SCUR(1,1)=SA(1)
C1171*      102      SCUR(1,2)=SB(1)
C1172*      103      DO 30 I=2,10
C1173*      104      IF(SA(I).EQ.0.0) SA(I)=1.0E37
C1174*      105      IF(SB(I).EQ.0.0) SB(I)=1.0E37
C1175*      106      SCUR(1,1)=SA(1)
C1176*      107      30 SCUR(1,2)=SB(1)
C1177*      108      GO TO 60
C1178*      109      40 DO 50 I=1,10
C1179*      110      SA(I)=1.0E37
C1180*      111      SB(I)=1.0E37
C1181*      112      SCUR(1,1)=1.0E37
C1182*      113      50 SCUR(1,2)=1.0E37
C1183*      114      60 CONTINUE
C1184*      115      C SET CONVERGENCE CRITERIA IF THEY HAVE NOT BEEN INPUT
C1185*      116      IF(ICHP.EQ.0.0)ICHP=0.001
C1186*      117      IF(ICRT.EQ.0.0)ICRT=0.001
C1187*      118      IF(ICRW.EQ.0.0)ICRW=0.001
C1188*      119      RETURN
C1189*      120      100 WRITE(6,100)
C1190*      121      110 FORMAT(5/,'*END OF JOB*')

```


I N D E X

SUBROUTINE INPT

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G1190•	115	STOP
G1191•	116	120 REWIND NIBOUT
G1192•	117	READINIBOUT,IBDATA1
G1193•	118	GO TO 0
G1194•	119	END

SUBROUTINE INPT

SYMBOL	REFERENCES
5	54 55 59*
8	62* 110
10	65 66 70*
12	73 75*
14	76 79*
16	71 80*
17	64 82*
18	82 84*
20	81 85*
21	87WH 88*
22	86 90*
25	91 94*
30	97 101*
40	94 103*
50	103 107*
60	102 108*
100	62RD 113*
110	113WR 114*
120	61 116*
ABHD	12CO 52NM
ABH	12CO 52NM
ABNA	40CO 52NM
ABNB	40CO 52NM
ACCLLT	27CO 52NM
ACG	34CO
ACK	35CO
AFKPSC	45CO
AFTADJ	44CO
AINCIN	11CO 52NM
AITST	25CO 52NM
ANG	16CO 52NM
AKR	16CO 51NM 52NM
AKRH	52NM
AKRH	52NM
ANSLOT	16CO 51NM 52NM
AKU	16CO 52NM
ALPI	78AG 79
ALPPL	12CO 52NM 75 84
ALPSEC	45CO 52NM 59* 79* 84*
ALH6	18CO 52NM
AN2	26CO 52NM
ANITW	25CO 52NM
ANR	34CO
ANR	20CO 52NM
ANO	11CO 52NM
AONM	13CO 52NM
AONM	14CO 52NM
AP	36CO

APORT	-	12C0	52NM	83					
APK1SC	-	12C0	52NM	58	69	69	69	83	
BN	-	13C0	52NM						
BLK001	-	4C0							
BLK005	-	5C0							
BLK021	-	6C0							
BLK026	-	7C0							
BLK031	-	8C0							
BLK033	-	9C0							
BLK1EH	-	47C0	52NM						
BN	-	14C0	52NM						
BRNOUT	-	36C0							
LTAOL	-	13C0	52NM						
CKDUMP	-	22C0	52NM						
CM	-	26C0	52NM						
CONSTS	-	16C0							
CRP	-	28C0	52NM	109	109				
CRT	-	28C0	52NM	110	110				
CRM	-	28C0	52NM	111	111				
CSCOLF	-	6C0	9C0	93					
CSTAR	-	18C0	51NM	52NM	92	93	93		
CSTR	-	18C0	51NM	52NM					
DATLUC	-	6C0							
DE	-	26C0	51NM	52NM					
DEL1	-	31C0	51NM	52NM					
DELH	-	39C0	52NM						
DELISP	-	25C0	52NM						
DELISS	-	24C0	52NM						
DELIST	-	24C0	52NM						
DELITO	-	24C0	52NM						
DELJ	-	31C0	52NM						
DH1	-	13C0	52NM						
DLKP	-	15C0	52NM						
DN1	-	14C0	52NM						
DT	-	26C0	51NM	52NM					
DUMA	-	5601	74	78AG					
DUMY	-	5601	75	78AG					
EPCA	-	27C0	52NM						
EPCN	-	27C0	52NM						
ERBAK	-	21C0	51NM	52NM					
EREXP	-	21C0	52NM						
ERR	-	3LG	4C0						
GAMA	-	18C0	52NM	92	92	92	92	93	
GAMAG	-	18C0	52NM						
GNOT	-	16C0							
HCO	-	31C0	52NM						
HEDABJ	-	46C0							
HH2	-	34C0							
HHR	-	13C0	52NM						
HHW	-	34C0							

I N D E X

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SUBROUTINE INPT

MSUBMG	-	38C0	52NM								
I	-	54	56	57	58	59	65	67	67	67	68
		68	68	69	69	69	71	72	74	75	77
		79	82	83	83	84	84	97	98	98	99
		99	100	100	101	101	103	104	105	106	107
IBDATA	-	52NM	62RD	117RD							
IBN	-	2RL	60AG								
IDISP	-	51NM									
IFLAG	-	37C0									
III	-	36C0									
IIJ	-	36C0									
II5	-	36C0									
IN	-	4C0	62RD								
INPT	-	1LY									
INPUT1	-	11C0									
INPUT4	-	12C0									
INPUTA	-	13C0									
INPUTB	-	14C0									
INPUTC	-	15C0									
INPUTE	-	16C0									
INPUTF	-	17C0									
INPUTG	-	18C0									
INPUTH	-	19C0									
INPUTI	-	20C0									
INPUTJ	-	21C0									
INPUTK	-	22C0									
INPUTL	-	23C0									
INPUTM	-	24C0									
INPUTN	-	25C0									
INPUTO	-	26C0									
INPUTP	-	27C0									
INPUTQ	-	28C0									
INPUTR	-	29C0									
INPUTT	-	30C0									
INPUTU	-	31C0									
INPUTV	-	32C0									
INPUTW	-	33C0									
IS1	-	36C0									
IS2	-	36C0									
J	-	55	56	57	58	59	66	67	67	68	68
		69	69	73	74	74	75	75	76	77	79
KDJMP	-	31C0	57NM								
KPLANE	-	26C0	52NM	65	71	82	86	87NM			
LISTI	-	3LG	6C0								
N	-	72M	73	78AG							
NACCEL	-	27C0	52NM								
NAKFT	-	44C0	52NM								
NAKEND	-	16C0	52NM								
NAKHED	-	46C0	52NM								
NAKR	-	16C0	52NM								

SUBROUTINE INPT

NCASE	-	5CO	61				
NCASES	-	5CO					
NCM	-	22CO	52NM				
NCUNT	-	42CO	52NM				
NCSCOE	-	18CO	52NM	90			
NCSTM	-	18CO	52NM	91			
NDT	-	21CO	52NM				
NEND	-	30CO					
NEPS	-	27CO	52NM				
NF	-	5CO					
NGEO	-	12CO	52NM	72			
NGEOHD	-	12CO	52NM				
NGEOHN	-	12CO	52NM				
NI	-	36CO					
NIBFLG	-	7CO	61				
NIBOUT	-	53=	116	117RD			
NLEWIS	-	5CO					
NPA	-	22CO	52NM				
NPH	-	17CO	52NM				
NPSUB	-	41CO	52NM				
NSCTRS	-	48CO	52NM	63	64	66	76
NSI	-	5CO					
NSLOT	-	36CO					
NSUBMG	-	38CO	52NM				
NTAB	-	16CO	52NM				
NTABE	-	36CO					
PA	-	31CO	52NM				
PAKMAA	-	37CO					
PAKMAU	-	38CO					
PAKMAC	-	39CO					
PAKMAU	-	40CO					
PAKMAU	-	41CO					
PAKMAH	-	42CO					
PAKMAH	-	43CO					
PARMB	-	36CO					
PCTAB	-	17CO	52NM				
PHI	-	31CO	52NM				
PHST	-	17CO	52NM				
PI	-	16CO					
PHAX	-	36CO					
PHIN	-	36CO					
PHOIHU	-	52NM					
PHOIN	-	52NM					
PONBAR	-	21CO	52NM				
PRESS	-	18CO	52NM				
PRIC	-	8CO					
PRTFLG	-	23CO	52NM				
PRTISP	-	8CO	52NM				
PRTISS	-	8CO	52NM				
PRTIST	-	8CO	52NM				

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SUBROUTINE INP1

PRTTTO	-	8C0	52NM								
PST	-	25C0	52NM								
PTIME	-	8C0	52NM								
R	-	18C0	52NM	92	93						
RADIAN	-	1WC0									
REFTLM	-	47C0	52NM								
RF	-	11C0	52NM	56	67	67	67				
RHJ	-	34C0									
RHOTUL	-	29C0	52NM								
KI	-	11C0	52NM	57	68	68	68				
RMOIND	-	52NM									
RMOIN	-	52NM									
RNI	-	35C0									
NPL	-	12C0	52NM	74							
SA	-	3CC0	52NM	95	98	98	100	104			
SU	-	3WC0	52NM	94	96	99	99	101	105		
SCUR	-	36C0	95	96	100	101	106	107			
SECN	-	63	79								
SECTUR	-	48C0									
SIGMAP	-	47C0	52NM								
SIRATC	-	42C0	52NM								
SLTURN	-	36C0	52NM								
SQRT	-	93									
STATIC	-	3LG	6C0								
STDYST	-	24C0	52NM								
STFLAG	-	24C0	52NM								
SUMAFZ	-	9C0									
TAB	-	43C0	52NM								
TAB2B	-	43C0	52NM								
TABD	-	16C0	52NM								
TABI	-	16C0	52NM								
TAAUDJ	-	4YC0	52NM	77							
TAAUT I	-	44C0	52NM								
TAUH0	-	12C0	52NM								
TAUHLD	-	46C0	52NM								
TAUMHA	-	33C0	52NM								
TAUMB	-	33C0	52NM								
TAUN	-	12C0	52NM								
TAURB	-	43C0	52NM								
TAUA	-	11C0									
TAUWRP	-	45C0									
TBLAKK	-	16C0	52NM								
TBLCH	-	22C0	52NM								
TBLPA	-	22C0	52NM								
TCOMB	-	18C0	52NM								
IDELDT	-	21C0	52NM								
TEMAFI	-	44C0	52NM								
TEMFAC	-	47C0									
TEMLED	-	46C0	52NM								
THETLA	-	42C0	52NM								

TIMAKR	-	16CO	52NM
TIMAX	-	22CO	52NM
TIMEAC	-	27CO	52NM
TIMECH	-	22CO	52NM
TIMECT	-	21CO	52NM
TIMEPA	-	22CO	52NM
TIMEPH	-	17CO	52NM
TIMEPS	-	27CO	52NM
TIMEZZ	-	9CO	
TIMPT1	-	25CO	52NM
TIMPT2	-	25CO	52NM
TO	-	37CO	52NM
TUFLAG	-	36CO	
TRSUB	-	41CO	52NM
TST	-	25CO	52NM
TASUB	-	41CO	52NM
VCH	-	34CO	
VCHINP	-	19CO	52NM
VCH	-	35CO	
VCNINA	-	32CO	52NM
VCNINB	-	32CO	52NM
VCNINP	-	19CO	52NM
VFHU	-	34CO	52NM
VFNO	-	35CO	52NM
VFNOA	-	32CO	52NM
VFNGB	-	32CO	52NM
VNDZSB	-	42CO	
WDOT	-	36CO	
WDOTD	-	36CO	
WFACI	-	29CO	52NM
WFCGR	-	9CO	52NM
WFGINT	-	9CO	
WFTOL	-	29CO	52NM
WORK47	-	45CO	
WORK48	-	49CO	
WORKRH	-	34CO	
WORKRN	-	35CO	
X	-	77	78AG
XCGHD	-	52NM	
XCGH	-	52NM	
XLIN	-	78	

92 92# 93


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G1245. 41      10 ENCASE.EQ.0) END FILE NIDOUT
G1246. 42      IF (INWRIGH.EQ.1) NIDFLG=1
G1247.      C
G1248.      C      SEARCH FOR CONTROL DATA
G1249.      C
G1250. 43      50 READ(NOUT,20,END=110) (A(I),I=1,14)
G1251. 44      IF (A(1).EQ.CONT) GO TO 60
G1252. 45      GO TO 50
G1253. 46      60 READ(NOUT,INPUT1)
G1254.      C
G1255.      C      SEARCH FOR TYPE OF DATA AVAILABLE
G1256.      C
G1257. 47      70 READ(NOUT,20,END=80) (A(I),I=1,14)
G1258. 48      IF (A(1).EQ.LEWIS) NL=1
G1259. 49      IF (A(1).EQ.IDN) NIDN=1
G1260. 50      IF (A(1).EQ.IDH) NIDH=1
G1261. 51      GO TO 70
G1262.      C
G1263.      C      TEST FOR SUFFICIENT DATA AVAILABLE TO RUN CASE
G1264.      C
G1265. 52      80 IF (NLEWIS.EQ.1 .AND. NL.EQ.0) GO TO 130
G1266. 53      IF (NIDH.EQ.3 .AND. NIDH.EQ.0) GO TO 130
G1267. 54      IF (NIDH .GT.0 .AND. NIDH.EQ.0) GO TO 130
G1268.      C
G1269.      C      WRITE HEADER AND TITLE
G1270.      C
G1271. 55      WRITE(6,90) (HEADER(I),I=1,13)
G1272. 56      90 FORMAT('1',I7(//),T25,84(' ')/T25,'02X,'//T25,'0 '1,13A6,' //
G1273.      $T25,'02X,'//)
G1274. 57      WRITE(6,100) (TITLE(I),I=1,13)
G1275. 58      100 FORMAT(T25,'0 '1,13A6,' //T25,'02X,'//T25,84(' '))
G1276. 59      RLWIND NOUT
G1277. 60      RETURN
G1278.      C
G1279.      C      ERROR STATEMENTS
G1280.      C
G1281. 61      110 WRITE(6,120)
G1282. 62      120 FORMAT('0...ERROR...NO CONTROL DATA SECTION')
G1283. 63      125 RLWIND NOUT
G1284. 64      GO TO 5
G1285. 65      130 WRITE(6,140)
G1286. 66      140 FORMAT('0...ERROR...INSUFFICIENT DATA TO RUN THIS CASE')
G1287. 67      GO TO 125
G1288. 68      150 WRITE(6,160)
G1289. 69      160 FORMAT('1',20(//),T45,'A L L D A T A C A S E S C O M P L E T E D
G1290.      $')
G1291. 70      STOP
G1292. 71      END

```


SUBROUTINE INPUT

SYMBOL	-----	REFERENCES	-----
5	-	20° 64	
8	-	21WR 22°	
10	-	28° 36	
20	-	28RD 29° 30WR 33WR 43RD 47RD	
30	-	35 37°	
35	-	31WR 32°	
40	-	38WR 39°	
50	-	43° 45	
60	-	44 46°	
70	-	47° 51	
80	-	47RD 52°	
90	-	55WR 56°	
100	-	57WR 58°	
110	-	43RD 61°	
120	-	61WR 62°	
125	-	63° 67	
130	-	52 53 54 65°	
140	-	65WR 66°	
150	-	28RD 68°	
160	-	68WR 69°	
A	-	14RL 28RD 30WR 31WR 33WR 34 35 43RD 44 47RD	
		48 49 50	
BLK001	-	3CO	
BLK005	-	4CO	
BLK009	-	5CO	
BLK021	-	6CO	
BLK025	-	7CO	
BLK026	-	8CO	
BLK030	-	9CO	
CASE	-	14RL 15DA 35	
COEINT	-	9CO 17NM	
CONT	-	14RL 15DA 44	
CSCULF	-	6CO 17NM	
DELT	-	5CO	
ERR	-	3CO 10LG	
HEADER	-	1101 12DA 55WR	
I	-	28RD 28RD 30WR 30WR 31WR 31WR 33WR 33WR 43RD 43RD	
		47RD 47RD 55WR 55WR 57WR 57WR	
10M	-	14RL 16DA 34 50	
10N	-	14RL 16DA 49	
INPUT	-	1EY	
INPUT1	-	17NM 46RD	
LEA15	-	14RL 16DA 48	
LIST1	-	6CO 10LG 17NM	
M101	-	5CO 17NM	
N1Z	-	5CO	
MPR	-	5CO	
NCARD	-	7CO 17NM	

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[illegible]

SUBROUTINE LESSQ(P,CS,N,X)

G1293.	1	SUBROUTINE LESSQ(P,CS,N,X)
G1294.	2	DIMENSION P(N),CS(N),X(3)
G1295.	3	SUMX = 0.0
G1296.	4	SUMX2 = 0.0
G1297.	5	SUMX3 = 0.0
G1298.	6	SUMX4 = 0.0
G1299.	7	SUMY = 0.0
G1300.	8	SUMXY = 0.0
G1301.	9	SUMX2Y = 0.0
G1302.	10	DO 5 I=1,N
G1303.	11	SUMX = SUMX + P(I)
G1304.	12	SUMX2 = SUMX2 + P(I)**2
G1305.	13	SUMX3 = SUMX3 + P(I)**3
G1306.	14	SUMX4 = SUMX4 + P(I)**4
G1307.	15	SUMY = SUMY + CS(I)
G1308.	16	SUMXY = SUMXY + P(I)*CS(I)
G1309.	17	5 SUMX2Y = SUMX2Y + P(I)**2*CS(I)
G1310.	18	FN=N
G1311.	19	TOP = (SUMX*SUMY - FN*SUMXY)*(SUMX*SUMX2 - FN*SUMX3)
G1312.	20	TOP2 = (SUMX2*SUMY - FN*SUMX2Y)*(SUMX**2 - FN*SUMX2)
G1313.	21	BOT = (SUMX*SUMX2 - FN*SUMX3)*(SUMX*SUMX2 - FN*SUMX3)
G1314.	22	BOT2 = ((SUMX2)**2 - FN*SUMX4)*(SUMX**2 - FN*SUMX2)
G1315.	23	X(3) = (TOP - TOP2)/(BOT - BOT2)
G1316.	24	X(2) = ((SUMX*SUMY - FN*SUMXY) - X(3)*(SUMX*SUMX2 - FN*SUMX3))/
G1317.	25	5 .SUMX**2 - FN*SUMX2)
G1318.	26	X(1) = (SUMY - SUMX*X(2) - SUMX2*X(3))/FN
G1319.	27	RETURN
G1320.		END

SUBROUTINE LESSQ(P,CS,N,X)

SYMBOL REFERENCES

S	-	10	17								
BOT	-	21	23								
BOT2	-	22	23								
CS	-	1AG	201	15	16	17					
FN	-	18	19	19	20	20	21	21	22	22	24
	-	24	24	25							
I	-	10	11	12	13	14	15	16	16	17	17
LESSQ	-	1EY									
N	-	1AG	201	201	10	18					
P	-	1AG	201	11	12	13	14	16	17		
SUMX	-	3	11	11	19	19	20	21	21	22	24
	-	24	24	25							
SUMX2	-	4	12	12	19	20	20	21	21	22	22
	-	24	24	25							
SUMX2Y	-	9	17	17	20						
SUMX3	-	5	13	13	19	21	21	24			
SUMX4	-	6	14	14	22						
SUMX5	-	8	16	16	19	24					
SUMY	-	7	15	15	19	20	24	25			
TOP	-	19	23								
TOP2	-	20	23								
X	-	1AG	201	23	24	24	25	25	25		

01371*	41	GO TO 40	
01372*	42	37 FACTOR=(TAU-TAUND(LH-1))/(TAUND(LH)-TAUND(LH-1))	
01373*	43	ABH=ABHD(LH-1)+FACTOR*(ABHD(LH)-ABHD(LH-1))	
01374*	44	40 DUSU=1,KPLANE	
01375*	45	ALPPL(1)=0.0	
01376*	46	DUSU12=1,NSCTRS	
01377*	47	ITAU=1	
01378*	48	H=HGLD(1)	
01379*	49	TAU=TAURPL(1,12)	
01380*	50	IF (ITAU.LT.(TAURWP(1,12)-0.00999)) GO TO 41	
01381*	51	ALPSEC(1,12)=0.0	
01382*	52	IF (ITAU.LT.TAURWP(1,12)) ALPSEC(1,12)=ALPPL(H-1,1)/SECN	
01383*	53	GO TO 49	
01384*	54	41 IF (RPL(1TAU,1)-TAU) 42,43,44	
01385*	55	42 ITAU=ITAU+1	
01386*	56	IF (ITAU.LE.H) GO TO 41	
01387*	57	GO TO 49	
01388*	58	43 ALPSEC(1,12)=ALPPL(ITAU,1)/SECN	
01389*	59	GO TO 49	
01390*	60	44 FACTOR=(TAU-RPL(1TAU-1,1))/(RPL(1TAU,1)-RPL(1TAU-1,1))	
01391*	61	ALPSEC(1,12)=ALPPL(1TAU-1,1)+FACTOR*(ALPPL(1TAU,1)-ALPPL(1TAU-1,1))	
01392*		• 1)/SECN	
01393*	62	49 ALPPL(1)=ALPPL(1)+ALPSEC(1,12)	
01394*	63	50 CONTINUE	
01395*	64	TAU=0.0	
01396*	65	DUSU12=1,NSCTRS	
01397*	66	51 TAU=TAU+TAURPL(KPLANE,12)	
01398*	67	TAU=TAU/SECN	
01399*	68	290 LNI=LN	
01400*	69	IF (NSUBMG.GT.0) GO TO 3800	
01401*	70	DU 320 J=LNI,NGEOMH	
01402*	71	IF (TAU-TMH) 310,310,300	91120
01403*	72	300 AAN=0.0	
01404*	73	ASPHOZ=0.0	
01405*	74	ASBHOZ=0.0	
01406*	75	XBN=0.0	
01407*	76	GO TO 390	91170
01408*	77	310 IF (TAUN(LN)-TAU) 320,350,360	
01409*	78	320 LN=LN+1	91190
01410*		C IF DO-LOOP IS EVER SATISFIED THE TABLE HAS BEEN OVERRUN	91220
01411*	79	WRITE(6,340)	91230
01412*	80	340 FORMAT(30HGEOMETRY TABLE LOOK-UP FAILURE - NOX)	91240
01413*	81	GO TO 390	91260
01414*	82	350 AAN=ABN(LN)	
01415*	83	ASPHOZ=0.0	
01416*	84	ASBHOZ=0.0	
01417*	85	XBN=0.0	
01418*	86	GO TO 390	91310
01419*	87	360 FACTOR=(TAU-TAUN(LN-1))/(TAUN(LN)-TAUN(LN-1))	
01420*	88	AAN = ABN(LN-1)+FACTOR*(ABN(LN)-ABN(LN-1))	

C-2

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SUBROUTINE LOOKUP

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Q1421*		C	IF APPROPRIATE CALCULATE MOMENTS OF INERTIA AND CENTER OF GRAVITY	91350
Q1422*	89		GO TO 390	
Q1423*	90	3800	DO 3870 K=1,2	
Q1424*	91		LN=LN1	
Q1425*	92		TAU=TAUZ(H1+K,1)	
Q1426*	93		IF (K.EQ.2) GO TO 3810	
Q1427*	94		IF (TAU-ITAUHNA-0.0001) 3810,3805,3805	
Q1428*	95	3805	AANA=0.0	
Q1429*	96		AJPH7A=0.0	
Q1430*	97		AJPH7A=0.0	
Q1431*	98		XUNA=0.0	
Q1432*	99		GO TO 3870	
Q1433*	100	3810	DO 3820 J=LN1,NGEOMH	
Q1434*	101		IF (TAUN(LN)-TAU) 3820,3850,3860	
Q1435*	102	3820	LN=LN+1	
Q1436*		C	IF DO-LOOP IS EVER SATISFIED THE TABLE HAS BEEN OVERRUN	
Q1437*	103		WRITE(6,3840)	
Q1438*	104	3840	FORMAT('GEOLOGY TABLE LOOK-UP FAILURE -NOX - STATEMENT 3820 IN L	
Q1439*			LOOKUP')	
Q1440*	105		GO TO 3900	
Q1441*	106	3850	IF (N.EQ.2) GO TO 3855	
Q1442*	107		AANA=ABNA(LN)	
Q1443*	108		GO TO 3870	
Q1444*	109	3855	AANB=ABNB(LN)	
Q1445*	110		GO TO 3870	
Q1446*	111	3860	FACTOR=(TAU-TAUN(LN-1))/(TAUN(LN)-TAUN(LN-1))	
Q1447*	112		IF (K.EQ.1) AANA=ABNA(LN-1)+FACTOR*(ABNA(LN)-ABNA(LN-1))	
Q1448*	113		IF (K.EQ.2) AANB=ABNB(LN-1)+FACTOR*(ABNB(LN)-ABNB(LN-1))	
Q1449*		C	IF APPROPRIATE CALCULATE MOMENTS OF INERTIA AND CENTER OF GRAVITY	
Q1450*	114	3870	CONTINUE	
Q1451*	115	3880	AAN = AANA + AANB	
Q1452*	116	3900	TAU=TAUZ(H1+2,1)	
Q1453*	117		LN=LN1	
Q1454*	118		DO 3920 J=LN1,NGEOMH	
Q1455*	119		IF (TAUNB(LN)-TAU) 3920,3950,3960	
Q1456*	120	3920	LN=LN+1	
Q1457*	121		WRITE(6,3940)	
Q1458*	122	3940	FORMAT('GEOLOGY TABLE LOOK-UP FAILURE - STATEMENT 3920 IN LOOKUP	
Q1459*			S')	
Q1460*	123		GO TO 390	
Q1461*	124	3950	A1B=TA1B(LN)	
Q1462*	125		A2B=TA2B(LN)	
Q1463*	126		GO TO 390	
Q1464*	127	3960	FACTOR=(TAU-TAUNB(LN-1))/(TAUNB(LN)-TAUNB(LN-1))	
Q1465*	128		A1B = TA1B(LN-1)+FACTOR*(TA1B(LN)-TA1B(LN-1))	
Q1466*	129		A2B = TA2B(LN-1)+FACTOR*(TA2B(LN)-TA2B(LN-1))	
Q1467*	130	390	CONTINUE	91400
Q1468*	131	400	RETURN	91410
Q1469*	132		END	

SUBROUTINE LOOKUP

SYMBOL	REFERENCES
30	26 27
31	30 31
32	33
33	35 36
34	35 38
35	34 38 39
36	38 40
37	38 42
40	37 41 44
41	50 54 56
42	54 55
43	54 58
44	54 60
49	46 53 57 59 62
50	44 63
51	65 66
290	68
300	71 72
310	71 77
320	76 77 78
340	79WK 80
350	77 82
360	77 87
390	76 81 86 89 123 126 130
400	131
3800	69 90
3805	94 94 95
3810	93 94 100
3820	100 101 102
3840	103WK 104
3850	101 106
3855	106 109
3860	101 111
3870	90 99 108 110 114
3880	115
3900	105 114
3920	118 119 120
3940	121WK 122
3950	119 124
3960	119 127
A1B	17C0 124 128
A2B	17C0 125 129
AAH	16C0 72 82 88 115
AAH/A	15C0 95 107 112 115
AAH/B	15C0 109 113 115
ABHD	3C0 40 43 43 43
ABH	3C0 82 88 88 88
ABH/A	13C0 107 112 112 112

ABND	=	1300	109	113	113	113					
ABTUT	=	1000									
AFRPL	=	1100									
AFRPS	=	1900									
AIH	=	700	36	40	43						
AINCIN	=	200									
AIT	=	1000									
AJBHED	=	700									
AJBH02	=	700	74	84							
AJBHZA	=	97									
AJPHED	=	700									
AJPH02	=	700	73	83							
AJPHZA	=	96									
ALPPL	=	300	52	58	61	61	61				
ALPKP	=	1100	45	62	62						
ALPSEC	=	1900	51	52	58	61	62				
AIID	=	200									
AP	=	900									
APORT	=	300									
APRTSC	=	300									
BRHOUT	=	900									
CONB	=	700									
CONG	=	800									
CONSIS	=	1800									
DTINT	=	700									
DUMYH	=	600									
DRD01	=	800									
FACTOR	=	42	43	60	61	87	88	111	112	113	127
		128	129								
GNOT	=	1800									
HSUBNG	=	1200									
I	=	44	45	48	49	50	51	52	52	52	54
		58	58	60	60	60	61	61	61	61	62
		62	62								
12	=	26	27	27	30	31	46	49	50	51	52
		52	58	61	62	65	66				
111	=	900									
11J	=	900									
115	=	900									
INPUT1	=	200									
INPUT4	=	300									
INPUT0	=	400									
INPUTW	=	500									
151	=	900									
152	=	900									
ITAU	=	47	54	55	55	56	58	60	60	60	61
		61	61								
J	=	34	70	100	118						
K	=	90	92	93	106	112	113				
KPLANE	=	400	27	27	44	66					

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SUBROUTINE LOOKUP

LH	=	21	33	38	39	39	40	42	42	42	43
		43	43								
LH1	=	33	34								
LN	=	22	68	77	70	70	82	87	87	87	88
		80	80	91	101	102	102	107	109	111	111
		111	112	112	112	113	113	113	117	119	120
		120	124	125	127	127	127	128	128	128	129
		129	129								
LM1	=	68	70	91	100	117	110				
LOOKUP	=	1EY									
N	=	48	52	56							
NEND	=	12C0									
NGEO	=	3C0	48								
NGEUMD	=	3C0	23	34							
NGEUMH	=	3C0	70	100	118						
NI	=	9C0	92	116							
NSCTRS	=	20C0	25	26	30	46	65				
NSLOT	=	9C0									
NSUBNG	=	12C0	69								
NTABE	=	9C0									
PARHAB	=	12C0									
PARHAD	=	13C0									
PARHAI	=	14C0									
PARHAJ	=	15C0									
PARHAM	=	16C0									
PARHAN	=	17C0									
PARHD	=	7C0									
PARHG	=	10C0									
PARHQ	=	11C0									
PD	=	8C0									
PI	=	18C0									
PHAX	=	9C0									
PHIN	=	9C0									
RADIAN	=	18C0									
RU	=	8C0									
RUZ	=	8C0									
RF	=	2C0	27								
RI	=	2C0	27								
RPL	=	3C0	54	60	60	60					
SCUR	=	9C0									
SECH	=	25	28	32	52	58	61	67			
SECTOR	=	20C0									
SPHDT	=	10C0									
SPONDY	=	10C0									
TA10	=	16C0	124	120	128	128					
TA20	=	16C0	125	129	129	129					
TAU	=	29	31	31	32	32	35	38	42	49	50
		52	64	60	64	66	66	67	67	71	77
		67	92	94	101	111	116	119	127		
TAUHD	=	3C0	23	38	42	42	42				

[illegible]

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G1470 1 SUBROUTINE MACH(ARINPT,GAMA,M)
G1471 2 IMPLICIT REAL (A-H,O-Z,M)
G1472 (C) ITERATION ROUTINE FOR SUBSONIC (M.LE.1.0) NOZZLE SECTION.
G1473 (C) INPUTS: ARINPT= AREA RATIO
G1474 (C) GAMA = SPECIFIC HEAT RATIO
G1475 (C) OUTPUT: M= MACH NUMBER
G1476 3 AH(AG)=((1./AG))*(((2./(GAMA+1.))*((1.+(GAMA-1.)/2.)*(AG**2)))**
G1477 5 ((GAMA+1.)/(2.*(GAMA-1.)))
G1478 4 IF(ARINPT.GE.2.4) GO TO 10
G1479 5 IF(ARINPT.GE.1.1) GO TO 30
G1480 6 IF(ARINPT.GE.1.0) GO TO 40
G1481 7 WRITE(6,1) ARINPT
G1482 8 1 FORMAT('UNKOWN IN SUBROUTINE MACH, ARINPT LESS THAN ONE'// ARINPT=
G1483 5,E15.8)
G1484 9 STOP
G1485 10 10 ITER=0
G1486 11 M1=0.1
G1487 12 AH1=AR(M1)
G1488 13 M2=0.25
G1489 14 20 AH2=AR(M2)
G1490 15 23 IF(AH2.GE.(ARINPT+.0001)).AND.(AH2.LE.(ARINPT+.0001)) GO TO 50
G1491 16 SLOPE=(M1-M2)/(AH1-AH2)
G1492 17 BIN1=M1-SLOPE*AH1
G1493 18 M1=M2
G1494 19 AH1=AH2
G1495 20 M2=SLOPE*ARINPT+BIN1
G1496 21 IF(M2.GT.1.0) M2=1.0
G1497 22 ITER=ITER+1
G1498 23 IF(ITER.LI.15) GO TO 20
G1499 24 WRITE(6,25) M1,M2,AH1,AH2,ARINPT,GAMA
G1500 25 25 FORMAT('NO CONVERGENCE IN SUBROUTINE MACH'// M1='E15.8'// M2='E1
G1501 55.8'// AH1='E15.8'// AH2='E15.8'// ARINPT='E15.8'// GAMA='E15.8')
G1502 26 STOP
G1503 27 30 M1=0.25
G1504 28 AH1=AR(M1)
G1505 29 M2=0.70
G1506 30 AH2=AR(M2)
G1507 31 ITER=0
G1508 32 GO TO 23
G1509 33 40 M1=0.70
G1510 34 AH1=AR(M1)
G1511 35 M2=1.00
G1512 36 AH2=1.0
G1513 37 ITER=0
G1514 38 GO TO 23
G1515 39 50 M=M2
G1516 40 RETURN
G1517 41 END
G1518 C
G1519 C SPACE SHUTTLE SOLID ROCKET BOOSTER PERFORMANCE EVALUATION MODEL

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I N D E X

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SUBROUTINE MACH(AR,INPT,GAMA,M)

01520•
01521•
01522•

C
C
C

EXECUTIVE MODULE (ROBERTS)

SYMBOL REFERENCES

I	-	7AK	8*
10	-	4	10*
20	-	14*	23
23	-	15*	32
26	-	24AK	25*
30	-	5	27*
40	-	6	33*
50	-	15	39*
AG1	-	3	3
AR	-	3*	12
AR1	-	12*	16
AR2	-	14*	15
ANINPT	-	1AG	4
BINT	-	17*	20
GAMA	-	1AG	3
ITEM	-	10*	22*
H	-	1AG	39*
M1	-	11*	12
M2	-	13*	14
		35*	39
MACH	-	1LY	
SLOPE	-	16*	17

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IMPLICIT REAL (A-H,O-Z,M)

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G1523.	1	IMPLICIT REAL (A-H,O-Z,M)
G1524.	2	LOGICAL ERR
G1525.	3	COMMON/BLKOUT/ERR,IN
G1526.	4	COMMON/BLKOUT/NEWIS,NSI,NF,NCASES,NCASE
G1527.	5	COMMON/BLKOUT/ NPRINT
G1528.	6	COMMON/BLKOUT/NTAPE,NPLOT,NCARD,NTAPE,NSCARD
G1529.	7	NCASE=0
G1530.	8	CALL PRESET
G1531.	9	10 CONTINUE
G1532.	10	CALL INPUT
G1533.	11	CALL INIT1
G1534.	12	NPRINT=7
G1535.	13	CALL PRT1
G1536.	14	CALL IBM
G1537.	15	110 NCASE = NCASE + 1
G1538.	16	IF (NCASES.EQ.NCASE)END FILE 13
G1539.	17	IF (NTAPE.GT.0) CALL OUTTAP
G1540.	18	IF (NCASES.EQ.NCASE) GO TO 120
G1541.	19	GO TO 10
G1542.	20	120 WRITE(6,130)
G1543.	21	130 FORMAT(11,20(1),145,'ALL DATA CASES COMPLETED 5')
G1544.		
G1545.	22	STOP
G1546.	23	END

IMPLICIT REAL (A-H,O-Z,M)

SYMBOL	REFERENCES
10	9, 19
110	15
120	10, 20
130	20, 21
BLK001	30
BLK005	40
BLK012	50
BLK025	60
LKH	26, 30
IM	14
IN	30
INIT1	11
INPUT	10
NCARD	60
NCASE	40, 7, 15, 16, 18
NCASES	40, 16
NP	40
NLEWIS	40
NPLUT	60
NPRINT	50, 12
NSCARD	60
NSI	40
NSTAPL	60
NTAPL	60, 17
OUTIAP	17
PRESET	8
PRT1	13

01647*	82	V(1)=0.0	
01648*	83	150 VPR(1)=0.0	
01649*		C	
01650*		C	INITIALIZE DATA CELLS FOR NEXT CASE.
01651*		C	
01652*	84	TAU =0.0	
01653*	85	AX=L.0	
01654*	86	AY=L.0	
01655*	87	DU 180 I=1,10	
01656*	88	UA(1) = 0.0	
01657*	89	WSLOT(1)=0.0	
01658*	90	WSLOT(1)=0.0	
01659*	91	AFKPL(1)=0.0	
01660*	92	180 ALPKP(1)=0.0	
01661*	93	DU 240 I=1,101	
01662*	94	DU 240 J=1,15	
01663*	95	240 PRHT(1,J)=0.0	
01664*	96	DELT=0.0	
01665*	97	290 NTEST =0	17150
01666*	98	NTEST4=0	17190
01667*		CC	17240
01668*		C	DETERMINE VALIDITY OF TIME INPUTS
01669*		CC	17260
01670*	99	IF(AINCIN(1).EQ.0.0) GO TO 360	17280
01671*	100	WRITE(6,350) AINCIN(1)	
01672*	101	350 FORMAT(14H)INVALID AINC, 5X,8HAINC = L20.7/63H0IAINC HAS BEEN IN	17410
01673*		XPUT NON-7LKO. AINC MUST BE INPUT AS ZERO.)/45H0ABOVE ERROR OCCUR	17420
01674*		XKED AT STATEMENT NUMBER 350)	
01675*	102	GO TO 470	17440
01676*		CC	17460
01677*	103	360 IF(AINCIN(KPLANE).EQ.HCO) GO TO 400	
01678*	104	WRITE(6,1) AINCIN(KPLANE),HCO	
01679*	105	1 FORMAT(15X,24H)INVALID AINCIN(KPLANE) =,1PE14.7,5X, 'LAST VALUE 0	
01680*		IF AINCIN MUST BE THE SAME AS HCO =,E14.7/35X, 'ABOVE ERROR OCCURED	
01681*		2 AT STATEMENT NUMBER 360 IN SUBROUTINE MNCHN1/)	
01682*		CC	17610
01683*		C	NUMBER OF PLANES IS EQUAL TO KPLANE. DETERMINE VALIDITY
01684*		C	OF SLOT INTERFACE LOCATIONS AND NUMBER OF SLOTS.
01685*		CC	17630
01686*	106	400 IF(SA(1)-HCO) 420,450,410	17640
01687*	107	410 I=1	
01688*	108	GO TO 530	17690
01689*	109	420 DO430 I=1,HSCTRS	17700
01690*	110	IF (SA(1) - (R(1,1)-R(1,1)) .LT. 0.0) WRITE(6,440) SA(1)	
01691*	111	430 CONTINUE	
01692*	112	440 FORMAT(12H)INVALID SA1,5X,6HSA1 = L20.7/20H0(SA1 IS EQUAL TO HCO 0	17730
01693*		XK LESS THAN TAUH. SA1 CANNOT BE LESS THAN TAUH OR EQUAL TO HCO.	17740
01694*		X1/53H0ABOVE ERROR OCCURRED AT STATEMENT NUMBER 400 OR 420.)	
01695*	113	450 DO 520 I=1,18	
01696*	114	IF (SCUR(1,1)-10.E+36)460,530,530	17780

 ORIGINAL PAGE IS
 OF POOR QUALITY

G1697.	115	460	IF (SCUR(1,2)-SCUR(1,1))470,490,490	17790
G1698.	116	470	WRITE(6,400)1,1,SCUR(1,2),1,1,1	17800
G1699.	117	480	FORMAT('INCININVALID S,12,INH,SA,1HS,12,2HB=L20.7/6HOSLOT ,12,6HFOR	17810
G1700.			XWARD INTERFACE IS GREATER THAN AFT INTERFACE LOCATION. S,12,21HA	17820
G1701.			X MUST BE LESS THAN S,12,2HB,7/4H0ABOVE ERROR OCCURRED AT STATEMENT	17830
G1702.			XNUMBER 430.)	17840
G1703.	118		BYEBYE=1.0	17850
G1704.	119		GO TO 520	17860
G1705.	120	490	IF (SCUR(1,1)-SCUR(1,2))500,500,520	17870
G1706.	121	500	K = 1 + 1	17880
G1707.	122		WRITE(6,510)K,K,SCUR(K,1),K,1,K,K	17890
G1708.	123		510 FORMAT('INCININVALID S,12,1HA,SA,1HS,12,2HA=L20.7/6HOSLOT ,12,37H FO	17900
G1709.			XWARD INTERFACE IS LESS THAN SLOT ,12,18H AFT INTERFACE. S,12,24H	17910
G1710.			XA MUST BE GREATER THAN S,12,2HB,7/4H0ABOVE ERROR OCCURRED AT STATE	17920
G1711.			XMENT NUMBER 450.)	17930
G1712.	124		BYEBYE=1.0	17940
G1713.	125		520 CONTINUE	17950
G1714.	126		530 IF (1-LT,18) NSLOT= 1-1	
G1715.	127		NSLOT=MAX(NSLOT,1)	17970
G1716.			CC	17990
G1717.			C SLOT INPUTS 1 THROUGH NSLOT-1 ARE VALID AND NUMBER	18010
G1718.			C OF SLOTS IS EQUAL TO NSLOT. DETERMINE LOCATION OF	18020
G1719.			C INCREMENT DIVIDING PLANES.	18030
G1720.			CC	18050
G1721.			C PLACE AN I.D.P. AT AINCPL,EACH REF.PLANE,EACH SLOT INTERFACE	18070
G1722.			C AND AT DELZ INTERVALS FROM THE CURRENT ONE OF THESE.	18080
G1723.			C	18090
G1724.			C NI INDEX ON CURRENT INCREMENT DIVIDING PLANES	18100
G1725.			C JJ INDEX ON NEXT DOWNSTREAM REFERENCE PLANE	18110
G1726.			C	18120
G1727.	128		NI=1	18130
G1728.	129		ANI=1.0	18140
G1729.	130		ZCALC(NI)=0.0	18150
G1730.	131		IIS=1	18160
G1731.	132		JJ=2	
G1732.	133		540 NI = NI + 1	18180
G1733.	134		ANI=ANI+1.0	18190
G1734.			C SET UP TENTATIVE I.D.P.	18200
G1735.	135		ZCALC(NI)=ZCALC(NI-1)+DELZ	18210
G1736.	136		IF (ZCALC(NI)-LT,AINCIN(JJ-1)) JJ=JJ-1	
G1737.			C HAS AFT TANGENT PLANE BEEN REACHED	18220
G1738.	137		IF (JJ-KPLANE)544,541,542	
G1739.	138		541 IF (ZCALC(NI)-AINCIN(KPLANE))544,610,542	
G1740.	139		542 ZCALC(NI)=AINCIN(KPLANE)	
G1741.	140		GO TO 610	18250
G1742.			C IS THERE AN ANISOTROPIC BURN-RATE CALCULATION REFERENCE DISTANCE	18270
G1743.	141		544 CONTINUE	
G1744.			C IF SLOT AND K.P. ARE VERY CLOSE, USE SLOT	18400
G1745.	142		564 IF (ABS(AINCIN(JJ)-SCUR(IIS,1))-.01)566,566,568	
G1746.	143		566 JJ = JJ + 1	

G1747*	144	GO TO 570	18430
G1748*		C WHICH IS ENCOUNTERED FIRST SLOT OR R.P.	18440
G1749*	145	560 IF (AINCIN(JJ)-SCUR(115,1))540,570,570	
G1750*		C IS SLOT WITHIN THIS DELZ INTERVAL	18440
G1751*	146	570 IF (SCUR(115,1)-ZCALC(N1))572,572,540	18470
G1752*	147	572 ZCALC(N1)=SCUR(115,1)	18480
G1753*	148	N1=N1+1	18490
G1754*	149	ANI=ANI+1.0	18500
G1755*		C IS THERE A R.P. IN THE SLOT	18510
G1756*	150	IF (AINCIN(JJ)-SCUR(115,2))574,574,576	
G1757*		C YES	18530
G1758*	151	574 ZCALC(N1)=AINCIN(JJ)	
G1759*	152	JJ = JJ + 1	
G1760*	153	N1=N1+1	18560
G1761*	154	ANI=ANI+1.0	18570
G1762*		C NO	18580
G1763*	155	576 ZCALC(N1)=SCUR(115,2)	18590
G1764*	156	115=115+1	18600
G1765*	157	JJ=JJ+1	
G1766*	158	GO TO 540	18610
G1767*		C R.P. ENCOUNTERED BEFORE SLOT. IF R.P. CLOSE TO I.D.P., USE R.P.	18620
G1768*	159	540 IF (ABS(AINCIN(JJ)-ZCALC(N1))-.01)594,595,592	
G1769*		C IS R.P. WITHIN THIS DELZ INTERVAL	18640
G1770*	160	592 IF (AINCIN(JJ)-ZCALC(N1)) 594,594,540	
G1771*	161	594 ZCALC(N1)=AINCIN(JJ)	
G1772*	162	595 JJ = JJ + 1	
G1773*	163	IF (ZCALC(N1).GE.AINCIN(KPLANE)) GO TO 600	
G1774*	164	GO TO 540	18680
G1775*	165	600 ZCALC(N1)=AINCIN(JJ)	
G1776*	166	610 IF (100-N1)620,640,640	18690
G1777*	167	620 WRITE(6,630)DELZ	18700
G1778*	168	GO TO 970	18710
G1779*	169	630 FORMAT(14H,INVALID DELZ,5X,5HDELZ=,E20.7/73HDELZ HAS RESULTED IN	18720
G1780*		XMORE THAN 100 INCREMENTS. INCREASE DELZ FOR HERUN,746HDO AVE ERRO	18730
G1781*		XN OCCURRED AT STATEMENT NUMBER 560.)	18740
G1782*		CC	18760
G1783*		C THE TOTAL NUMBER OF INCREMENT DIVIDING PLANES IS LESS	18780
G1784*		C THAN OR EQUAL TO 100. CALL SUBROUTINES TO COMPUTE	18790
G1785*		C CYLINDRICAL SECTION PLANE CONSTANTS AND TO PRINT	18800
G1786*		C DATA VALUES AND ERROR COMMENTS.	18810
G1787*		CC	18830
G1788*	170	640 CONTINUE	
G1789*		CC	18970
G1790*		C GEOMETRY HAS NOT BEEN INPUT FOR THE FIRST CASE OR GEOMETRY	18990
G1791*		C IS TO BE REVISED FOR NEXT CASE. DETERMINE PLANE CONSTANTS.	19000
G1792*		CC	19020
G1793*	171	650 WRITE(6,655)	
G1794*	172	655 FORMAT(1X)	
G1795*	173	710 WRITE(6,720)	19510
G1796*	174	720 FORMAT(19H,UNLAD END)	19520

Line	Address	Code	Instruction	Comment
01797	175		IF(BTAE1770,770,750	19710
01798			CC	19730
01799		C	FORWARD DONE HAS A FULL WEB.	19750
01800			CC	19770
01801	176		750 WRITE(6,750) DH,BTAE	
01802	177		760 FORMAT(5X,6H HH = ,E15.7,5X,6HBTAE=,E15.7)	
01803	178		GO TO 840	19810
01804	179		770 CONTINUE	
01805	180		AINC(1)=AINC(1)	
01806	181		ANDH=AND(1)	
01807	182		R1DH=R1(1,1)	
01808	183		R1DH=R1(1,1)	
01809			CC	20020
01810		C	FORWARD DONE IS A STRAIGHT THROUGH WEB. DETERMINE	20040
01811		C	HEAD END CONSTANTS	20050
01812			CC	20070
01813		C	INITIALIZE END CONSTANTS SUBROUTINE TO HEAD END VALUES	20120
01814		C	AND SOLVE FOR CONSTANTS.	20130
01815			CC	20150
01816	184		DE1=DH1	20170
01817	185		BE=DH	20180
01818	186		AUEN=ADHM	20190
01819	187		N1AE=NGEUND	20200
01820	188		NEND=1	
01821	189		CALL ENDCSB(1ERROR)	20210
01822	190		IF(VCHINP.G1.0.D)VFEU=VFH0	20220
01823	191		IF(1ERROR.EQ.1)BYE101.0	20230
01824			CC	20250
01825		C	MOVE ENDCSB VARIABLES TO HEAD END	20270
01826			CC	20290
01827	192	800	DO 810 I=1,20	20310
01828	193	810	RH1(1)=RE1(1)	20320
01829	194		IF(VCHINP)830,830,820	20330
01830	195	820	VCH=VCHINP	20340
01831	196	830	VFEU=VFEU	20350
01832	197	840	WRITE(6,850)	20360
01833	198	850	FORMAT(11HNOZZLE END)	20370
01834	199		AINC(1)=AINC(KPLANE)	
01835	200		ANDH=AND(KPLANE)	
01836	201		R1DH=R1(KPLANE,1)	
01837	202		R1DH=R1(KPLANE,1)	
01838	203		DE1=DH1	20620
01839	204		BE=DH	20630
01840	205		AUEN=ADHM	20640
01841	206		N1AE=NGEUND	20650
01842	207		NEND=2	
01843			CC	20670
01844		C	SOLVE FOR END CONSTANTS AND PRINT DATA VALUES.	20690
01845			CC	20710
01846	208		CALL ENDCSB(1ERROR)	20730

01647*	209	IF (VCNINP,GT,0.0) VFFU=VFND	
01648*	210	IF (LEKRN,EQ,1) BYEBYE=1.0	20750
01649*		CC	20770
01650*		C MOVE ENDCSB VARIABLES TO NOZZLE END.	20790
01651*		CC	20810
01652*	211	DO N96 I=1,20	20830
01653*	212	BYE KHI(I)=RE1(I)	20840
01654*	213	VCN=VCNINP	
01655*	214	IF (NSUBMG,EQ,0) GO TO 920	
01656*	215	VCNA=VCNINA	
01657*	216	VCND=VCNIND	
01658*	217	920 IF (HCO=SCUR(I,1)) 960,930,930	20880
01659*	218	930 IF (HCO = SCUR(NSLOT,2) - (RFDH - KIDH)) 940,960,960	
01660*	219	940 IF (SLTURN(NSLOT),EQ,2.0 .OR. SLTURN(NSLOT),EQ,3.0) GO TO 960	
01661*	220	WRITE(6,950) NSLOT,NSLOT,SB(NSLOT),NSLOT,NSLOT	
01662*	221	950 FORMAT(T2,'INVALID S',I2,'H',I5,'S',I2,'H',I5,'E20.7/T2,'(HCO-S',I2,	
01663*		S') IS LESS THAN TAUHN*/T2,'SLOT ',I2,'AFT INTERFACE CANNOT BE WIT	
01664*		SHIN TAUHN OF THE AFT TANGENT PLANE WHEN THE INTERFACE IS NOT INHIB	
01665*		SITED',/T2,'ERROR OCCURED IN MNCHN1 AT STATEMENT 930')	
01666*	222	BYEBYE=1.0	20950
01667*		CC	20970
01668*		C PRINT THE PROGRAM INPUTS FOR THE PROPERTIES OF THE	20990
01669*		C PROPELLENT AND THE BURNING RATE EQUATION CONSTANTS.	21000
01670*		CC	21020
01671*	223	960 CONTINUE	
01672*		CC	21070
01673*		C CHECK THE VALIDITY OF THE BURNING RATE EQUATION CONSTANTS	21090
01674*		C AND PRINT APPROPRIATE DIAGNOSTIC COMMENTS.	21100
01675*		CC	21120
01676*	224	CALL RUVSUB	21140
01677*	225	IF (BYEBYE,LT,1.0) GO TO 980	21150
01678*	226	970 BYEBYE=0.0	21160
01679*	227	LEKRN=0	21170
01680*	228	LEHN=5	21180
01681*	229	980 CONTINUE	
01682*	230	RETURN	
01683*	231	END	

ORIGINAL PAGE IS
OF POOR QUALITY

SYMBOL REFERENCES

1	-	104AK	105°		
10	-	62	64°		
20	-	60	65°		
30	-	65	68°		
50	-	69°			
60	-	67	69	70°	
70	-	70AK	71°		
80	-	69	73°		
140	-	75°			
150	-	75	83°		
155	-	76	79°		
160	-	87	92°		
200	-	93	94	95°	
240	-	74	97°		
350	-	104AK	101°		
360	-	99	103°		
400	-	103	104°		
410	-	106	107°		
420	-	106	109°		
430	-	109	111°		
440	-	110AK	112°		
450	-	106	113°		
460	-	114	115°		
470	-	115	116°		
480	-	116AK	117°		
490	-	115	115	120°	
500	-	120	120	121°	
510	-	122AK	123°		
520	-	113	119	120	125°
530	-	160	114	114	126°
540	-	133°	146	158	160 164
541	-	137	138°		
542	-	137	138	139°	
544	-	137	138	141°	
564	-	142°			
566	-	142	142	143°	
568	-	142	145°		
570	-	144	145	145	146°
572	-	146	146	147°	
574	-	156	151°		
576	-	156	150	155°	
590	-	145	159°		
592	-	159	160°		
594	-	159	160	160	161°
595	-	159	162°		
600	-	163	165°		
610	-	138	140	166°	
620	-	166	167°		

ALFLM	-	17C0							
ALPPL	-	5C0							
ALPRP	-	28C0	92m						
ALPSEC	-	35C0	59mR						
ALPA	-	24C0							
ALPY	-	24C0							
ANACH	-	2C0							
ANAAU	-	127							
ANI	-	30C0	129m	134m	139	149m	14Y	154m	154
ANIBO	-	20C0							
ANIK	-	18C0							
ANLUPS	-	2C0							
ANO	-	4C0	181	200					
ANODM	-	15C0	181m	200m					
AOEN	-	16C0	186m	205m					
AUHM	-	6C0	186						
AUHH	-	7C0	205						
AP	-	27C0							
APA	-	23C0							
APF	-	23C0							
APHI	-	2C0							
APORT	-	5C0							
APRTSC	-	5C0	54mR						
APX	-	24C0							
APY	-	24C0							
AX	-	85m							
AY	-	86m							
BE	-	16C0	185m	204m					
BH	-	6C0	176mR	185					
BLKOUS	-	2C0							
BH	-	7C0	204						
BRNOUT	-	27C0							
BTAOL	-	6C0	175	176mR					
BYEUYE	-	67m	118m	124m	191A	210m	222m	225	226m
CAE	-	17C0							
CBE	-	17C0							
CCCL	-	17C0							
CCVL	-	17C0							
CDCE	-	17C0							
CDVE	-	17C0							
CECE	-	17C0							
CEVL	-	17C0							
CKTIME	-	14C0							
COMA	-	24C0							
COMG	-	21C0							
COMH	-	22C0							
COMJ	-	23C0							
COMO	-	24C0							
CGMT	-	25C0							
COMK	-	26C0							

I N D E X

SUBROUTINE MNCHNI

[illegible]

PAGE 102

[illegible]

[illegible]

I N D E X

SUBROUTINE MHCNH1

PAGE 104

VFEU	=	1700	190=	196	209=						
VFHO	=	1800	190	196=							
VINA	=	3400									
VHNB	=	3400									
VHNB	=	1900	209								
VHNOA	=	1200									
VHNOB	=	1200									
VHNOZSB	=	3300	63=	63							
VP	=	2100									
VPR	=	2200	83=								
WDUT	=	2700									
WDOTD	=	2700									
WDOTI	=	2600									
WORKA47	=	3500									
WORKA	=	1500									
WORKDL	=	1600									
WORKRE	=	1700									
WORKRH	=	1800									
WORKRH	=	1900									
WSLUD	=	2300	89=								
WSLUI	=	2300	90=								
ABANH	=	2500									
ZCALC	=	2600	130=	135=	135	136	138	139=	146	147=	151=
		155=	159	160	161=	163	165=				

.....

G1884	1	SUBROUTINE MNCHN4	29480
G1885		CC	30240
G1886		C SUBROUTINE MNCHN4 IS THE CONTROL ROUTINE	
G1887		C WHICH OBTAINS THE INTERNAL BALLISTIC SOLUTION (SECTION	30270
G1888		C 5.2.2).	30280
G1889		CC	30300
G1890	2	REAL MIB	
G1891	3	LOGICAL LIST1,STATIC	
G1892	4	COMMON/BLK21/CSCOLF(3),L1511,STATIC	
G1893	5	COMMON/BLK24/AFIT,ADEL,ICOUNT	
G1894	6	COMMON/BLK29/AINC5,TAUMH,HFS,INLT(100,0),AINCH5,IFLS,KRPN	
G1895	7	COMMON/CONST5/GNOT,PI,RADIAN	
G1896	8	COMMON/INPUT1/AINC1(18),AND(18),RF(10,8),K1(18,8),TAUW	
G1897	9	COMMON/INPUT4/NGED(18),APORT(18),RPL(50,18),ALPPL(50,18),	
G1898		TAUHP(50),AUHP(50),APRTSC(10,8),TAUN(50),ABN(50),NGEHD,NGEHN	
G1899	10	COMMON/INPUTD/AKRH,AKRN	
G1900	11	COMMON/INPUTE/AKG(5),AKU(5),AKR(39),AKSLOT(2),NAKR,TIMAKR(25),	
G1901		TBLAKR(25),NAKEND,TAB(125,8),TABD(25,8),NTAB(8)	
G1902	12	COMMON/INPUTF/DPH,PHS1(70),TIMEPH(70),PCTAU	
G1903	13	COMMON/INPUTG/CSTAK,GAMA,R,NCSTR,PRESS(20),CSTR(20),GAMAG(20),	
G1904		AMW(20),TCMB(20),NCSCUE	
G1905	14	COMMON/INPUTH/VCHINP,VCHINP	
G1906	15	COMMON/INPUTI/AN2,CH,DE,DT,ANN	
G1907	16	COMMON/INPUTK/NCH,TULCH(50),TIMECH(50),TIMAX,CKDUMP(80),NPA,	
G1908		TIMEPA(50),TULPA(50)	
G1909	17	COMMON/INPUTH/STFLAG,STDYST,DELT51,DELT55,DELITO	
G1910	18	COMMON/INPUTO/KPLANE	
G1911	19	COMMON/INPUTU/DEL,PA,PHI,HCO,DEL2,KDUMP(72)	
G1912	20	COMMON/INPUTV/VFNOA,VFNOB,VCHINA,VCHINB	
G1913	21	COMMON/ROKRRH/KH1(5),HH2,ACG,HHW,VFH0,VCH,ANK(10)	
G1914	22	COMMON/ROKRRH/KH1(8),VFH0,VCH,ACK(10)	
G1915	23	COMMON/DUHYG/TINCK1,AKRHLD,PCTABX	
G1916	24	COMMON/DUHYK/PECH1,APORTN	
G1917	25	COMMON/DUHYL/TINCK2	
G1918	26	COMMON/DUHYM/CKTIME,NTEST4	
G1919	27	COMMON/DUHYT/AFX,AFY,ALPH1,TAUMW,THOLD	
G1920	28	COMMON/DUHYK/JUMP,NDACK	
G1921	29	COMMON/DUHYW/TAUWPL(10,8)	
G1922	30	COMMON/CONHA/DELT,APH1,WDOT1,ANIDU,TIMW,UT,ANLOPS,ACCEL,	
G1923		ABCYL,PRN1(101,15),AINCH1,AMACH,ZCALC(101)	
G1924	31	COMMON/CONB/ANH,AJPHE0,AJBHLD,AJPHOZ,AJRNOZ,XBH,XBN,DTINT	
G1925	32	COMMON/CONG/TAUZ(101,8),RZ(101,8),PD(101),TAUWDP(101,8),RB,VF,	
G1926		LDOT,VF	
G1927	33	COMMON/CONH/PDPR(101),V(101),VPRI(101)	
G1928	34	COMMON/CONH/TAUM,TAUHY,AINCX,RFY,TAUWX,AINCY,RFY,TAUWY,VFPP	
G1929	35	COMMON/CONH/RFH1,RBH1,ALPA,ALPY,APX,APY	
G1930	36	COMMON/CONS/TPR,AKRADJ,IEND	
G1931	37	COMMON/COMT/TAU,XBARIN,AFI,AJPP	
G1932	38	COMMON/PARHD/AP,PHIN,PMAX,WDOT,111,112,WDOTD,NSLOT,NTABE,TOFLAG,	
G1933		BRKOUT,115,151,152,PI,SCUR(10,2)	

01934*	39	COMMON/PARHF/PH,TIME,AINCW,T,P,DELTA,U,PON,DIS,AMPN,AI,AMW,AKNST	
01935*	40	COMMON/PARHG/VFH,AAH,VFN,VIS,AIT,SPHDT,SPOND,T,VFINT,ABTOT	
01936*	41	COMMON/PARHI/ADHCL,AIBCYL,AIPCYL,VPH,VPN	
01937*	42	COMMON/PARHK/F,EP,PEPO,CFOL,VFWL,WD,DELD,CLUPS,CFD,WGLOT,	
01938*		SWDOTH	
01939*	43	COMMON/PARHQ/AFRPL(18),ALPRF(18)	
01940*	44	COMMON/PARHR/KSLUT,KSLDT,KSLDTF,SLTFLG	
01941*	45	COMMON/PARHS/ICHN	
01942*	46	COMMON/PARHZ/AUSLOT,PU	
01943*	47	COMMON/PARHAA/TO,IFLAG	
01944*	48	COMMON/PARHAD/HSUBHG,HSUBHG,HEND	
01945*	49	COMMON/PARHAD/ABNA(50),ABNB(50)	
01946*	50	COMMON/PARHA1/VFHA,VFNH,VCHN,VCHD	
01947*	51	COMMON/PARHAJ/AANA,AAHB	
01948*	52	COMMON/PARHAK/PIAT,AENT,DIA,PIA,PUB,AZA,YGA,PHA,PHAZ,IMA,YGAZ,	
01949*		MDRLTA,UIH,AIA,MDIB	
01950*	53	COMMON/PARHAL/DWDOTA,DWDOTB,DWDTA,DWDTB,P1BT,T1B,M1B	
01951*	54	COMMON/PARHAN/ A1U,A2B	
01952*	55	COMMON/WORK47/ALPSEL(18,8),AFKPSL(18,8),TAUWRP(18,8)	
01953*	56	COMMON/SECTOR/NSCTRS	
01954*	57	COMMON/WORK48/TAUADJ(18,8)	
01955*	58	DIMENSION SVALP(18,8),RRRPL(18,8)	
01956*		CC	30330
01957*		C INITIALIZE REFERENCE FRAME A GEOMETRY TABLES.	30350
01958*		CC	30370
01959*		CC	30650
01960*		C INITIALIZE DATA CELLS.	30670
01961*		CC	30690
01962*	59	20 HIGUN=1,CL+J6	30710
01963*	60	ICHN=4	
01964*	61	SECH=NSCTRS	
01965*	62	DOZ11=1,KPLANE	
01966*	63	DOZ1J=1,NSCTRS	
01967*	64	TAUWRP(1,J)=RF(1,JI-R1(1,J))+TAUADJ(1,J)	
01968*	65	21 TAUWPL(1,J)=TAUADJ(1,J)	
01969*	66	PH=PHI	30720
01970*	67	PON=PHI	
01971*	68	TPR=1.0	
01972*	69	AKHLD=0.0	
01973*	70	PCTABX=1.0	
01974*	71	IF(STFLAG.GT. 0.0)PH=0.5*PHI	
01975*	72	IF(STFLAG.GT.0.0) PON=0.5*PHI	
01976*	73	PU=PH	30730
01977*	74	DTINT=0.0	30740
01978*	75	P=PH	30750
01979*	76	DWD1=0.0	
01980*	77	AH0=0.0	30760
01981*	78	IF(NSCTR) 25,25,24	
01982*	79	24 CALL XLIN(PRESS,TCONB,NCSTR,PH,TO,1)	
01983*	80	CALL XLIN(PRESS,GANAG,NCSTR,PH,GANA,2)	

G1984.	81	25 T=TO	
G1985.	82	UT=SQRT(TU+R*GHOT+GAHA*2./(GAHA+1.6))	30770
G1986.	83	TJHL=U*U	30780
G1987.			30790
G1988.		C	30800
G1989.		C	30810
G1990.		C	30880
G1991.	84	DLT=DELTS	
G1992.	85	IF (STFLAG.GT. 0.5) DELT=DELST	
G1993.	86	Y1=U*U	
G1994.	87	TAU=U*U	30840
G1995.	88	ANO = ABHD(1)	30850
G1996.	89	ANOX = ANH(1)	
G1997.	90	IF (NSUBMG.EQ.0) GO TO 26	
G1998.	91	ANOX=ABHD(1)	
G1999.	92	ANOX=ABHD(1)	
G2000.	93	26 AAN=ANOX	
G2001.	94	ANH=ANO	30890
G2002.	95	VFN=VFNO	30900
G2003.	96	VFN=VFNO	30910
G2004.	97	IF (NSUBMG.EQ.0) GO TO 27	
G2005.	98	VFNA=VFNOA	
G2006.	99	VFN=VFNO	
G2007.	100	AANA=ANOX	
G2008.	101	AAND=ANOX	
G2009.	102	27 IF (VCHINP.GT.0) VCH=VCHINP	
G2010.	103	IF (VCHINP.GT.0) VCH=VCHINP	
G2011.	104	DZ(1)=1, KPLANE	30930
G2012.	105	ALPR(1)=0.0	
G2013.	106	DZ(1)=1, NSCTNS	
G2014.	107	28 ALPR(1)=ALPR(1)+ALPSEC(1,J)	
G2015.	108	IF (STFLAG) 35, 35, 30	
G2016.	109	30 PH=0.5*PHI	
G2017.	110	35 NIP1 = N1 + 1	
G2018.	111	NIP2=N1+2	
G2019.	112	DO 45 I=1, NIP2	
G2020.	113	PDPK(1)=0.5*PHI	
G2021.	114	PRNT(1,1)=0.0	
G2022.	115	DZ(1)=1, NSCTNS	
G2023.	116	TAU(1,12) = 0.	
G2024.	117	TAU(1,12) = 0.	
G2025.	118	40 KUZ(1,12) = 0.	
G2026.	119	IRP=1	
G2027.	120	DO 45 IDP=1, N1	
G2028.	121	XP=ZCALC(IDP)	
G2029.	122	IXP=XP*1000.0	
G2030.	123	29 X1=AINCIN(IRP)	
G2031.	124	X2=AINCIN(IRP+1)	
G2032.	125	IX2=X2*1000.0	
G2033.	126	TEMP=(IXP-X1)/(X2-X1)	
G2034.	127	IF (IXP.LE. IX2) GO TO 43	

G2034.	128	IKP=IRP+1	
G2035.	129	IF (IKP.GT.(KPLANE-1)) GO TO 50	
G2036.	130	GO TO 42	
G2037.	131	93 CONTINUE	
G2038.	132	DO44IS=J, NSCTRS	
G2039.	133	TAUZ(IDP,IS)=TAUADJ(IRP,IS)+(TAUADJ(IRP+1,IS)-TAUADJ(IRP,IS))*	
G2040.		TEMP	
G2041.	134	RF1=RF(IRP,IS)	
G2042.	135	RF2=RF(IRP+1,IS)	
G2043.	136	R11=R1(IRP,IS)	
G2044.	137	R12=R1(IRP+1,IS)	
G2045.	138	R1DP=RF1+(RF2-RF1)*TEMP	
G2046.	139	R10DP=R11+(R12-R11)*TEMP	
G2047.	140	44 TAUADP(IDP,IS)=RF1DP-R10DP+TAUZ(IDP,IS)	
G2048.	141	45 CONTINUE	
G2049.	142	50 CONTINUE	
G2050.	143	PMIN=PA	
G2051.	144	PMAX=BICUN	31120
G2052.	145	TFR=PUN/PH	
G2053.	146	ANLOPS = 0.0	31130
G2054.	147	LE=0	31140
G2055.	148	IF (NCM.GT.0) CALL XLNITIMECN,TBLCH,NCN,TIME,CM,3)	
G2056.	149	IF (NPA.GT.0) CALL XLNITIMEPA,TBLPA,NPA,TIME,PA,30)	
G2057.		CC	31160
G2058.		C DETERMINE BURN DISTANCE FOR REFERENCE PLANES B THROUGH J.	31180
G2059.		CC	31200
G2060.	150	60 KPMI=KPLANE-1	31220
G2061.	151	NIMI=N1-1	31230
G2062.	152	IIS=1	31240
G2063.	153	K=1	31250
G2064.	154	70 DO 320 I=2,KPMI	31260
G2065.	155	80 IF (SCUR(IIS,1).GE.AINCIN(1)) GO TO 110	
G2066.	156	IF (SCUR(IIS,2).GE.AINCIN(1)) GO TO 110	
G2067.	157	100 IIS=IIS+1	31300
G2068.	158	GO TO 80	31310
G2069.	159	110 DO 120 LI=K,NIMI	
G2070.	160	L=L1	
G2071.	161	IF (AINCIN(1)-ZCALC(L)) 130,130,120	
G2072.	162	120 CONTINUE	31340
G2073.		CC	31360
G2074.		C ZCALC(K) IS JUST DOWNSTREAM OF AINC	31380
G2075.		CC	31400
G2076.	163	130 CONTINUE	31420
G2077.	164	IF (SCUR(IIS,1).LE.AINCIN(1)) GO TO 170	
G2078.	165	140 IF (AINCIN(1).GE.ZCALC(L)) GO TO 160	
G2079.	166	M=L	
G2080.	167	L=L-1	31460
G2081.	168	GO TO 250	31470
G2082.	169	140 M=L+1	31480
G2083.	170	GO TO 250	31490

[illegible]

G2134*	197	D033012=1, NSCTR5	
G2135*	198	330 SVALP(1,12)=ALPSEC(1,12)	
G2136*	199	AH0X=AH0	32400
G2137*	200	AH0X=AAH	
G2138*	201	IF (INSUBNG, LG, 0) GO TO 340	
G2139*	202	AH0X=AAH	
G2140*	203	AH0X=AAH	
G2141*	204	340 CONTINUE	
G2142*		C	32430
G2143*	205	CALL LOOKUP	
G2144*		C	32450
G2145*		CC	32470
G2146*		C DETERMINE HEAD END GEOMETRY VALUES.	
G2147*		CC	32510
G2148*	206	VFHPR=VFH	32550
G2149*	207	RBZN=0.0	
G2150*	208	RBZN=0.0	
G2151*	209	RBZN=0.0	
G2152*	210	D034515=1, NSCTR5	
G2153*	211	RBZN=RBZN+RBZ(1,12)	
G2154*	212	RBZN=RBZN+RBZ(N1+1,12)	
G2155*	213	345 RBZN=RBZN+RBZ(N1+2,12)	
G2156*	214	RBZN=RBZN/SECN	
G2157*	215	RBZN=RBZN/SECN	
G2158*	216	RBZN=RBZN/SECN	
G2159*	217	VFH=VFHPR-(AH0+AH1)*RBZN*DELT/2.0	
G2160*	218	VFH=AMAX1(VFH, 0.0)	32570
G2161*		CC	32600
G2162*		C DETERMINE REFERENCE PLANE GEOMETRY VALUES.	
G2163*		CC	32600
G2164*	219	D05201PLANE=1, KPLANE	
G2165*	220	APORT(1PLANE)=0.0	
G2166*	221	AFRPL(1PLANE)=0.0	
G2167*	222	D051912=1, NSCTR5	
G2168*	223	APRTSC(1PLANE,12)=APRTSC(1PLANE,12)+(ALPSEC(1PLANE,12)+SVALP(1PLANE,12))*RBZPL(1PLANE,12)*DELT/2.0	
G2169*	224	APORT(1PLANE)=APORT(1PLANE)+APRTSC(1PLANE,12)	
G2170*	225	AFRPL(1PLANE,12)=(PI*HF(1PLANE,12)*2)-APRTSC(1PLANE,12)	
G2171*	226	519 AFRPL(1PLANE)=AFRPL(1PLANE)+AFRPLSC(1PLANE,12)	
G2172*	227	520 CONTINUE	
G2173*	228	1PLANE=KPLANE	
G2174*	229	APORTN=APORT(KPLANE)	
G2175*		CC	33750
G2176*		C DETERMINE NOZZLE END GEOMETRY VALUES.	33770
G2177*		CC	33790
G2178*		CC	
G2179*	230	IF (INSUBNG, LG, 0) GO TO 530	
G2180*	231	VFH=VFH-(AH0X+AAH)*RBZN*DELT/2.0	
G2181*	232	VFH=AMAX1(VFH, 0.0)	
G2182*	233	GO TO 540	
G2183*	234	530 VFHA=VFH-(AH0X+AAH)*RBZN*DELT/2.0	

G2184*	235	VFNB=VFNB-(ANORX*AAHB)*RB/ND*DELT/2.0	
G2185*	236	VFNA=ANAX*(VFNA,C.0)	
G2186*	237	VFNB=ANAX*(VFNB,C.0)	
G2187*	238	VFN=VFNA+VFNB	
G2188*	239	540 CONTINUE	
G2189*	240	IF(KDUMP(5).EQ.0)GO TO 580	
G2190*	241	IF(TIME.LT.CKDUMP(3)) GO TO 540	
G2191*	242	IF(TIME.GT.CKDUMP(4)) GO TO 545	
G2192*	243	GO TO 550	
G2193*	244	545 KDUMP(5)=0	
G2194*	245	GO TO 580	
G2195*	246	550 WRITE(6,560)	
G2196*	247	560 FORMAT(1H,54X,'INDICATOR DATA'//1	
G2197*	248	WRITE(6,570) ANIBO,ANLOPS,BRNOUT,CKTIME,CLOPS,ICNN,IE,IFLAG,	
G2198*		1 111,11J,11S,1PLANE,1S1,1S2,JUMP,KPLANE,NBACK,N1,NSLOT,SLTFLG,	
G2199*		2THICK1,THICK2,TOFLAG	
G2200*	249	570 FORMAT(10ANIBO= ',F4.0,3X,'ANLOPS= ',F3.0,3X,'BRNOUT= ',F2.0,3X,	
G2201*		1'CKTIME= ',F7.2,3X,'CLOPS= ',F2.0//10ICNN= ',11,2X,'IE= ',11,2X,	
G2202*		2'IFLAG= ',12,2X,'111= ',13,2X,'11J= ',13,2X,'11S= ',13,2X,	
G2203*		3'1PLANE= ',12,2X,'1S1= ',13,2X,'1S2= ',12,2X,'JUMP= ',12,2X,'KPLAN	
G2204*		4'= ',17//10NBACK= ',12,2X,'N1= ',13,2X,'NSLOT= ',12,2X,'SLTFLG= ',	
G2205*		5F3.0,2X,'THICK1= ',F7.2,2X,'THICK2= ',F7.2,2X,'TOFLAG= ',F7.2)	
G2206*	250	580 CONTINUE	
G2207*	251	IF(ICHG.EQ.5)RETURN	
G2208*	252	IF(KDUMP(7))720,720,680	34290
G2209*	253	680 IF(TIME-CKDUMP(1)) 700,690,690	
G2210*	254	690 KDUMP(1)=1	34310
G2211*	255	KDUMP(2)=1	34320
G2212*	256	KDUMP(3)=1	34330
G2213*	257	700 IF(TIME-CKDUMP(2)) 720,720,710	
G2214*	258	710 KDUMP(1)=0	34350
G2215*	259	KDUMP(2)=0	34360
G2216*	260	KDUMP(3)=0	34370
G2217*		CC	33840
G2218*		C INITIALIZE DATA CELLS FOR NEXT FIVE HEAD PRESSURE ITERATION.	33860
G2219*		CC	33880
G2220*	261	720 CONTINUE	34380
G2221*	262	U=0.0	34390
G2222*	263	V=0.0	34400
G2223*	264	VP=0.0	34410
G2224*	265	ANPI=0.0	34420
G2225*	266	ABCYL=0.0	34430
G2226*	267	AHCYL=0.0	34440
G2227*	268	AIPCYL=0.0	34450
G2228*	269	AIBCYL=0.0	34460
G2229*	270	AINCH=0.0	34470
G2230*	271	TAU=0.0	
G2231*	272	RU=0.0	
G2232*	273	DO7251S=1,NSCTRS	
G2233*	274	TAU=TAU+TAUZ(1,1S)	

022340	275	725	RB=RB+RBZ(1,15)	
022350	276		TAU=TAU/SECN	
022360	277		RB=RB/SECN	
022370	278		RB=RB/R.G	
022380	279		111=1	34500
022390	280		110=1	34520
022400	281		115=1	34530
022410	282		IF(111.GT.1100 TO 1100)	34540
022420	283		ANLOPS=ANLOPS+1.	34550
022430	284		IF(ANLOPS.LT.21.100 TO 730	34560
022440	285		1E=2	34570
022450	286		GO TO 1100	34580
022460	287	730	VF=VFH	34590
022470	288		AP=APOKT(1)	
022480	289		APHI=AP	34620
022490	290		PD(1)=PH	34630
022500	291		P=PH	34640
022510	292		IF(NCSTR1750,750,740	34650
022520	293	740	CALL XLIN(PRESS,CSTR,NCSTR,PON,CSTAR,5)	
022530	294		CALL XLIN(PRESS,TCOMB,NCSTR,PH,TU,6)	
022540	295		CALL XLIN(PRESS,GAMAG,NCSTR,PH,GAMA,7)	
022550	296		CALL XLIN(PRESS,AMW,NCSTR,PH,AMW,8)	
022560	297		R=1545.864/AMW	
022570	298		IF(	
022580			CSCOE(1).NE.0.0) CSTAR=CSCOE(1)+CSCOE(2)*	
022590	299	750	S PON+ CSCOE(3)*PON**2	
022600	300		T=TU	34670
022610	301		DELTA=P/(12.*R*T)	34680
022620	302		DURC612=1,NSCIRS	
022630	303	770	IS=12	
022640	304		IEND=1	
022650	305		CALL RDSUB(15)	
022660	306		IEND=0	
022670	307		IF(1CHN.EQ.5) GO TO 550	
022680	308	780	IF(STDYST=1.0) 800,780,780	
022690	309	790	IF(AKRH) 800,800,790	
022700	310	800	RB=AKRH*P**AKR(37)	
022710	311	805	TUFLAG=C.G	
022720	312		RBZ(1,12)=RB	
022730	313		RE=C.G	
022740	314	806	DURC612=1,NSCIRS	
022750	315		RB=RB+RBZ(1,12)	
022760	316		RB=RB/SECN	
022770	317		VPH=VCH-VFH	34780
022780	318		DWDOT=RB*DELF*AHH	34790
022790	319		IF(TIME .LT. DELT .AND. STFLAG .GT. 0.0)DWDOT=0.0	
022800	320		IF(TIME .LT. DELT .AND. STFLAG .GT. 0.0)DWDOT=0.0	
022810	321	810	IF(PCTAB)820,820,810	34800
022820	322	820	DWDOT=DWDOT+PCTAB	34810
022830	323	830	IF(STFLAG)830,830,840	34820
		836	CALL AIRSUB(1E)	34830

02284*	324		IF (ICNN.EQ.5) GO TO 550	34840
02285*	325		GO TO 850	34850
02286*	326	846	DNDT=DELTA*(VFHPR-VFH)*ZERODV(DEL1)+VFH*(PD(1)-PDP(1))	34860
02287*			XZERODV(12.*R*1*DEL1)	34870
02288*	327		IF (TIME.LT. DELT) DNDT=0.0	
02289*	328		WDOT=DNDT-DNDT	34880
02290*	329		WDOT=AMAX1(0.0,WDOT)	34890
02291*	330		WDOT=WDOT	34900
02292*	331		P=PD(1)	34910
02293*	332		IE=L	34920
02294*	333	856	PO=PH	34930
02295*	334		RO5=RB	
02296*	335		U=U.0	
02297*	336		APH=AP	
02298*	337		ITERH=L	
02299*	338	855	DO 860 I=1,10	
02300*	339		UTMP=U	
02301*	340		P=U.5*(PO+SQRT(PO**2-(8.*WDOT**2*R*T)/(AP*GNOT*(APH+AP))))	
02302*	341		U=(PO-P)*(APH+AP)*GNOT*ZERODV(2.*WDOT)	
02303*	342		AMACH = U*ZERODV(SQRT(GNOT*R*T*GAMA))	
02304*	343		T=U*(1/(1+(GAMA-1)/2+AMACH**2))	
02305*	344		ERROR=(U-UTMP)*ZERODV(UTMP)	
02306*	345		IF (I.EQ.1) GO TO 860	
02307*	346		IF (ABS(ERROR).LT.0.001) GO TO 865	
02308*	347	860	CONTINUE	35020
02309*		C**	QUICK FIX-UPDATE TO GENERAL CASE	
02310*	348	865	IF (ITERH.LQ.0) GO TO 867	
02311*	349		IF (ABS(P-POLD).LT.0.01) GO TO 870	
02312*	350	867	POLD=P	
02313*		C	CALCULATE BURNRATE BASED ON AVERAGE HEAD END PRESSURE (CR)	
02314*	351		RB=RO5*(1+(P/PH)**AKH(37))/2.)	
02315*	352		DURH12=1,USCIRS	
02316*	353	868	ROZ(1,12)=RB	
02317*	354		DNDT = RB*DELF*APH	
02318*	355		IF (PCTAG.GT.0.0) DNDT=DNDT*PCTAG	
02319*	356		DNDT = DELTA*(VFHPR-VFH)*ZERODV(DEL1)+VFH*(PD(1)-PDP(1))	
02320*			XZERODV(12.*R*1*DEL1)	
02321*	357		IF (TIME.LT. DELT .AND. STFLAG.GT.0.0) DNDT=0.0	
02322*	358		IF (TIME.LT. DELT .AND. STFLAG.GT.0.0) DNDT=0.0	
02323*	359		WDOT = DNDT-DNDT	
02324*	360		WDOT = AMAX1(0.0,WDOT)	
02325*	361		WDOT = WDOT	
02326*	362		ITERH=ITERH+1	
02327*	363		IF (ITERH.GT.10) GO TO 870	
02328*	364		GO TO 855	
02329*	365	870	PD(1)=P	35030
02330*	366		PO=PH	35040
02331*	367		PRNT(1,1)=PO	35050
02332*	368		PRNT(1,2)=P	35060
02333*	369		PRNT(1,3)=T	35070

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Address	Line Number	Code	Instruction	Comments
02334	370		PRNT(1,4)=U	
02335	371		PRNT(1,5)=AMACH	35080
02336	372		PRNT(1,6)=ALPRP(1)	35090
02337	373		PRNT(1,7)=APORT(1)	
02338	374		PRNT(1,9)=ADOT	
02339	375		PRNT(1,10)=DWDOT	35120
02340	376		PRNT(1,11)=DWDOT	35130
02341	377		PRNT(1,12)=RB	35140
02342	378		PRNT(1,13)=TAUZ(1,1)	35150
02343	379		IF(IE)500,075,580	
02344		CCCC	CC	35210
02345		C	INITIALIZE X AND Y REFERENCE FRAME DATA CELLS	
02346		CCCC	CC	35260
02347	380		875 KPHI=KPLANL-1	
02348	381		D07501=1,KPHI	
02349	382		KRPH=1	
02350	383		KRPHN=1	
02351	384		KRPHI=1+1	
02352	385		CALL SEGSUB(IE)	
02353	386		IF(ICHN,EQ.5)GO TO 550	
02354	387		IF(IE)900,950,500	
02355	388	950	CONTINUE	
02356	389	900	VF=VF+VFN	
02357	390		AUTOT=AIHH+ABCYL+AAH	
02358	391		AP=APURTH	37270
02359	392		APHI=AP	37280
02360	393	940	CONTINUE	37290
02361	394	1000	IEND=2	
02362	395		IS=0	
02363	396		CALL RBSUB(15)	
02364	397		IF(ICHN,EQ.5)GO TO 550	37330
02365	398		IF(ISTOYST-1.0)1030,1010,1010	37340
02366	399	1010	IF(AKKH)1030,1030,1020	37350
02367	400	1020	RU=AKKH/P**AKH(37)	37360
02368	401	1030	TOFLAG=0.0	37370
02369	402		D0103512=1,NSCTRS	
02370	403	1035	R02(11+1,12) = RU	
02371	404		D000T=AAH*DELF*RB	
02372	405		IF(PCTAB)1050,1050,1040	37400
02373	406	1040	D000T=DWDOT*PCTAB	37410
02374	407		IF(TIME .LT. DELT .AND. STFLAG .GT. 0.0)DWDOT=0.0	37420
02375	408	1050	111=111+1	
02376	409		IF(NSUBHG.LE.0) GO TO 1055	
02377	410		IOPT=3	
02378	411		IF(ISTOYST.EQ.1.0 .AND. STFLAG.EQ.0.0) IOPT=2	
02379	412		CALL NSCE(IOPT)	
02380	413		IE=0	
02381	414		IF(ICHN,EQ.5) GO TO 550	
02382		C	REGION OUTPUT DATA	
02383	415		PRNT(111+1,1)=PIBT	

02364*	416	PRNT(111+1,2)=PIB	
02365*	417	PRNT(111+1,3)=TIB	
02366*	418	PRNT(111+1,4)=UIB	
02367*	419	PRNT(111+1,5)=HIB	
02368*	420	PRNT(111+1,7)=AIB	
02369*	421	PRNT(111+1, 9)=DWDOTB-DWDTB	
02370*	422	PRNT(111+1,10)=DWDOTB	
02371*	423	PRNT(111+1,11)=DWDTB	
02372*	424	PRNT(111+1,12)=RUZ(11+2,1)	
02373*	425	PRNT(111+1,13)=TAUZ(11+2,1)	
02374*	426	PRNT(111,11)=DWDTA	
02375*	427	111=111-1	
02376*	428	1051 CONTINUE	
02377*	429	GO TO 1060	
02378*	430	1055 CALL ATBS(11)	
02379*	431	IF(1CHN, EQ, 5) GO TO 550	37450
02400*	432	P=PU(111)	37460
02401*	433	111=111-1	37470
02402*	434	1060 PU=P*(TO/T1)**(GAMA/(GAMA-1.))	37490
02403*	435	PUN=PU	37500
02404*	436	VFP=VCN-VIN	37510
02405*	437	PRNT(111+1,1)=PON	37520
02406*	438	PRNT(111+1,2)=P	37530
02407*	439	PRNT(111+1,3)=T	37540
02408*	440	PRNT(111+1,4)=U	37550
02409*	441	PRNT(111+1,5)=AHACH	37560
02410*	442	PRNT(111+1,7)=AP	37570
02411*	443	PRNT(111+1,9)=WDOT	37580
02412*	444	PRNT(111+1,10)=DWDOT	37590
02413*	445	PRNT(111+1,12)=RUZ(111+1,1)	
02414*	446	PRNT(111+1,13)=TAUZ(111+1,1)	
02415*	447	IF(NCSTR) 1080, 1090, 1070	37630
02416*	448	1070 TOTEMP=TO	37640
02417*	449	CALL XLIN(PRESS, CSTR, NCSTR, PON, CSTAR, 9)	
02418*	450	CALL XLIN(PRESS, TCONR, NCSTR, PH, TU, 10)	
02419*	451	CALL XLIN(PRESS, GAMA, NCSTR, PH, GAMA, 11)	
02420*	452	CALL XLIN(PRESS, AMRG, NCSTR, PH, AMW, 12)	
02421*	453	R=1545.864/AMW	
02422*	454	IF (CSCOE(11)*NE, 0.0) CSTAR=CSCOE(11)*CSCOE(12)*	
02423*		S PON+ (CSCOE(13)*PUN)**2	
02424*	455	TU=TOTEMP	37660
02425*	456	1080 CONTINUE	
02426*	457	IF(1E) 580, 1090, 580	
02427*	458	1090 CALL SETPH(1E)	37680
02428*	459	IF(1CHN, EQ, 5) GO TO 550	37690
02429*	460	IF(11) 1100, 1100, 580	37700
02430*	461	1100 IF (TIME-DELT) 1270, 1270, 1110	37710
02431*	462	1110 IF (BKOUT-1.) 1120, 1270, 1270	37730
02432*	463	1120 PRKIT=(2./(GAMA+1.))**((GAMA/(GAMA-1.))	37790
02433*		C START AKRS1 PROJECTION ROUTINE FOR RECONSTRUCTION	

024340	464	1270	CONTINUE	
024350	465	1270	CALL BURNDUT(IE)	
024360	466	1290	CONTINUE	38080
024370	467		IF (IE.GT.1) ICHN=5	38090
024380	468		IF (ICHN.EQ.5) GO TO 550	38100
024390	469		IF (ITIMAX) 1310,1310,1300	38110
024400		C	CHECK FOR CASE TERMINATION BY MAX. TIME OR MIN. HEAD-END PRESS.	38120
024410	470	1300	CONTINUE	38130
024420	471		IF (ITIMAX-TIME) 1460,1310,1310	38140
024430	472	1310	CONTINUE	38150
024440	473		IF (BURNDUT-1.0) 1330,1320,1320	38160
024450	474	1320	IF (PH-PA/PHCRIT) 1460,1330,1330	38170
024460	475	1330	CONTINUE	38180
024470	476		IF (STFLAG) 1360,1360,1340	38190
024480	477	1340	N=1+2	38200
024490		C	STORE PREVIOUS-TIME VALUES FOR CONTINUED START OR TAILOFF TRANSIEN	38210
024500		C	IT CALC.	38220
024510	478		DO 1350 I=1,N	38230
024520	479		VPH(I)=V(I)	38240
024530	480	1350	PDPH(I)=PD(I)	38250
024540	481	1360	CONTINUE	38260
024550	482		IF (TIME-LL.TIMEPH(NPH)) GO TO 1370	
024560	483		GO TO 1380	
024570		C	ESTIMATE BURN RATE COEFFICIENT IF HEAD-END PRESS. SCHEDULE WAS GIV	38300
024580		C	IEH	38310
024590	484	1370	CALL RUST50	38320
024600	485		IF (ICHN.EQ.5) GO TO 550	38330
024610	486	1380	CONTINUE	38340
024620	487		IF (NPH.GT.0) GO TO 50	
024630	488	1390	CONTINUE	38360
024640	489		IF (STFLAG) 50,50,1400	38370
024650	490	1400	IF (TIME-DLLT) 1410,1410,1420	38380
024660	491	1410	PH=PHI	38390
024670	492	1420	CONTINUE	
024680	493		IF (E150,1430,1430	
024690		C	CHECK FOR STEADY-STATE PRE-BURNOUT--CONTINUE SOLUTION	38410
024700	494	1430	IF (BURNDUT-1.0) 50,1440,1440	38420
024710		C	CHECK FOR START-TRANS. PRE-BURNOUT--CONTINUE SOLUTION	38430
024720	495	1440	IF (TIME-1.0E-6) 50,1450,1450	38440
024730		C	CHECK FOR TERMINATION OF TAIL-OFF	38450
024740	496	1450	IF (PH-PA) 1460,1460,50	38460
024750	497	1460	ICHN=6	
024760		CC		38490
024770		C	INTERNAL BALLISTIC SOLUTION IS COMPLETED FOR	38510
024780		C	THIS CASE. CALL CHAIN 1.	38520
024790		CC		38540
024800	498	1470	RETURN	38560
024810	499		END	

SYMBOL	REFERENCES
20	59.
21	62 63 65.
24	78 79.
25	78 79 81.
26	79 93.
27	97 102.
28	104 106 107.
30	108 109.
35	108 110.
40	112 115 118.
42	123 130.
43	127 131.
44	132 143.
45	123 141.
50	129 142. 482 489 489 493 494 495 496
60	153.
70	154.
80	155. 158
100	157.
110	155 156 159.
120	159 161 162.
130	161 163.
140	165.
160	165 169.
170	164 171.
180	171 172.
190	172 173.
200	171 172 175.
210	177. 180
220	177 178.
230	178 179.
240	177 178 181.
250	168 173 182.
310	187 189.
319	182 185.
320	184 186.
321	191 194.
325	195 195.
330	196 197 198.
340	201 204.
345	210 213.
519	222 226.
520	214 227.
530	230 234.
540	233 239.
545	242 244.
550	243 246. 306 324 386 397 414 431 459 468
	485

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560	-	246	247						
570	-	248	249						
580	-	249	241	245	250	379	379	387	457
680	-	252	253						457
690	-	253	253	254					460
700	-	253	257						
710	-	257	258						
720	-	257	257	257	257	261			
725	-	273	275						
730	-	284	287						
740	-	292	293						
750	-	292	292	299					
770	-	303							
780	-	307	307	308					
790	-	308	309						
800	-	307	308	308	310				
805	-	301	311						
806	-	313	314						
810	-	320	321						
820	-	320	320	322					
830	-	322	322	323					
840	-	322	326						
850	-	325	333						
855	-	338	344						
860	-	338	345	347					
865	-	346	348						
867	-	348	350						
868	-	352	353						
870	-	349	363	365					
875	-	379	380						
950	-	381	387	388					
980	-	387	389						
990	-	393							
1000	-	394							
1010	-	396	398	399					
1020	-	399	400						
1030	-	398	399	399	401				
1035	-	402	403						
1040	-	405	406						
1050	-	405	405	408					
1051	-	428							
1055	-	429	430						
1060	-	429	434						
1070	-	447	448						
1080	-	447	447	456					
1090	-	457	458						
1100	-	462	466	460	460	461			
1110	-	461	462						
1120	-	462	463						
1270	-	461	461	462	462	464			

1270	-	4650						
1290	-	4660						
1300	-	469	4700					
1310	-	469	469	471	471	4720		
1320	-	473	473	4740				
1330	-	473	474	474	4750			
1340	-	476	4770					
1350	-	478	4800					
1360	-	476	476	4810				
1370	-	482	4840					
1380	-	483	4860					
1390	-	4880						
1400	-	489	4900					
1410	-	490	490	4910				
1420	-	496	4920					
1430	-	493	493	4940				
1440	-	494	494	4950				
1450	-	495	495	4960				
1460	-	471	474	496	496	4970		
1470	-	4980						
A1A	-	5200						
A1B	-	5400	420					
A2A	-	5200						
A2B	-	5400						
AAN	-	4600	930	200	231	390	404	
AANA	-	5100	1000	202	234			
AANB	-	5100	1010	203	235			
ABCYL	-	3600	2660	390				
ABHD	-	900	80					
ABH	-	900	89					
ABHA	-	4900	91					
ABHB	-	4900	92					
ABS	-	340	349					
ABSLOT	-	4600						
ABTUT	-	4600	3900					
ACCIL	-	3000						
ACG	-	2100						
ACA	-	2200						
ADEL	-	500						
ALH1	-	5200						
AFF	-	3700						
AFIT	-	500						
AFKPL	-	4300	2210	2260	226			
AFKPS	-	5500	2250	226				
AFX	-	2700						
AFY	-	2700						
AIH	-	3100	440	199	217	317	354	390
AHO	-	770	800	94	1990	217		
AIBCYL	-	4100	2690					
AIRST	-	430						

		123	124	155	156	161	164	165	184
AIDSUB	=	323							
AIRCHI	=	3000							
AIRCHS	=	600							
AIRCHH	=	000	123	124	155	156	161	164	165
AIRCHW	=	3900	270m						
AIRCHS	=	600							
AIRCA	=	3400							
AIRCY	=	3400							
AIRCTL	=	4100	268m						
AIR	=	4000							
AIRHED	=	3100							
AIRHED	=	3100							
AIRHED	=	3100							
AIRHED	=	3100							
AIRP	=	3700							
AKG	=	1100							
AKK	=	1100	309	361	400				
AKRADJ	=	3600							
AKRH	=	1000	308	309					
AKRHLD	=	2300	69m						
AKRH	=	1000	392	400					
AKRST	=	3900							
AKSLOT	=	1100							
AKU	=	1100							
ALPHI	=	2700							
ALPPL	=	900							
ALPRP	=	4300	105m	107m	107	372			
ALPSEC	=	5500	107	198	223				
ALPA	=	3500							
ALPY	=	3500							
AMACH	=	3300	342m	343	371	441			
AMAXI	=	218	232	236	237	329	360		
AMINI	=	193							
AMPN	=	3900	265m						
AMW	=	3900	296AG	297	452AG	453			
AMWG	=	1300	296AG	452AG					
AN2	=	1000							
ANIBU	=	3000	248mR						
ANK	=	2100							
ANLUPS	=	3000	146m	248mR	283m	283	284		
ANN	=	1500							
ANO	=	800							
ANQAA	=	91m	100	232m	234				
ANQBA	=	92m	101	203m	235				
ANQX	=	89m	93	200m	231				
ANQCYL	=	4100	267m						
AP	=	3800	288m	289	336	340	340	341	391m
APH	=	336m	340	341					392
APHI	=	3300	289m	392m					442
APORT	=	900	220m	224m	224	229	288	373	

[illegible]

		359	375	404=	406=	406	407=	444		
DNDDTA	=	53CO								
DNDDTB	=	53CO	421	422						
DNDDT	=	76=	319=	326=	327=	328	356=	358=	359	376
DNDDTA	=	53CO	426							
DNDDTB	=	53CO	421	423						
LP1	=	42CO								
ERRKOK	=	344=	346							
I	=	42CO								
GAMA	=	13CO	8CAG	82	82	295AG	342	343	434	434
		463	463	463						451AG
GAMAG	=	13CO	8CAG	295AG	451AG					
GNOT	=	7CO	82	346	341	342				
HCO	=	19CO								
HH2	=	21CO								
HHW	=	21CO								
HSUHHG	=	48CO								
I	=	62	64	64	64	64	65	65	104	105
		107	107	112	113	114	116	117	118	154
		156	161	164	165	183	184	184	190	192
		192	193	193	193	196	198	198	338	345
		382	385	384	470	479	479	480	480	381
12	=	115	116	117	118	187	188	188	189	189
		192	192	192	193	193	193	197	198	198
		212	213	222	223	223	223	223	223	224
		225	225	226	301	302	311	313	314	352
		462	403							353
IBHOUT	=	465								
ICHN	=	45CO	60=	248NR	251	306	324	306	397	414
		459	467=	468	485	497=				431
ICOUNT	=	5CO								
IDF	=	12CO	121	133	140	140				
IL	=	147=	248NR	262	205=	323AG	332=	379	385AG	387
		430AG	457	458AG	460	465AG	467	493		413=
ICND	=	36CO	303=	305=	394=					
IFLAG	=	47CO	248NR							
IFLS	=	6CO								
III	=	38CO	248NR	279=	365	408=	408	415	416	417
		419	420	421	422	423	424	425	426	427
		432	433=	433	437	438	439	440	441	442
		444	445	445	446	446				443
IIJ	=	30CO	248NR	280=						
II5	=	30CO	152=	155	156	157=	157	164	172	178
		281=								248NR
INPUT1	=	8CO								
INPUT4	=	9CO								
INPUT6	=	10CO								
INPUTE	=	11CO								
INPUTF	=	12CO								
INPUTG	=	13CO								

PROPERTY OF THE
NAVY AND NOT BE FORN

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SUBROUTINE BNCHN4

[illegible]

[illegible]

I N D E X

SUBROUTINE Routines

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WURANH	=	21C0									
WURKNN	=	22C0									
X1	=	123	124	126							
X2	=	124	125	126							
XGAKIH	=	37C0									
XBNH	=	31C0									
XUN	=	31C0									
ALIN	=	79	80	148	149	293	294	295	296	449	450
		451	452								
XP	=	121	122	126							
Y1	=	46									
ZCALC	=	30C0	121	161	165	172	178	184	184	184	184
		184									
ZLRDVB	=	326	326	341	342	344	356	356			

024820	1	SUBROUTINE MODT5B(IE)	92850
024830		CC	93100
024840	C	SUBROUTINE MODT5B MODIFIES THE VALUE OF TIME AND THE VALUE OF THE	93120
024850	C	NOZZLE THROAT DIAMETER AFTER CONVERGENCE OF THE BALLISTIC SOLUTION	93130
024860	C	ITERATION AND INITIALIZES X AND Y REFERENCE PLANES FOR	93140
024870	C	INTERPOLATION OF THE INCREMENT DIVIDING PLANES IN SUBROUTINE	93150
024880	C	TISUB.	93160
024890		CC	93180
024900	2	COMMON/CONSTS/GNOT,PI,RADIAN	
024910	3	COMMON/INPUT1/AINCIN(18),ANCI(18),KFI(10,8),KFI(18,8),TAUW	
024920	4	COMMON/INPUT1/ANZ,CH,DE,DT,AMN	
024930	5	COMMON/INPUT1/JTDT,TIMEUT(25),TDELUT(25),ERBAR,EREXP,PONBAR	
024940	6	COMMON/INPUT1/STFLAG,STBYST,DELTS1,DELTS5,DELT10	
024950	7	COMMON/INPUT1/KPLANE	
024960	8	COMMON/WORK1/AINC(1),ANODH,KFDM,KIDH	
024970	9	COMMON/DUHYU/DELD	
024980	10	COMMON/COMA/DELT,APHI,WDOT1,ANIBU,TIMEW,UT,ANLOPS,ACCEL,	
024990		ABCYI,PRNT(10,15),AINCHI,AMACH,ZCALC(101)	
025000	11	COMMON/COMB/AMH,AJPHED,AJBHED,AJPHOZ,AJBNOZ,XUH,XBN,DTINT	
025010	12	COMMON/COMH/TAUMX,TAUHY,AINCX,KFA,TAUWX,AINCY,KFY,TAUWY,VFPP	
025020	13	COMMON/PARH1/AP,PHIH,PNAX,WDOT,111,11J,WDOTD,NSLOT,NTABE,1QFLAG,	
025030		1 BKOUT,115,151,152,N1,SCUR(16,2)	
025040	14	COMMON/PARH1/PH,TIME,AINCX,T,P,DELTA,U,PON,DIS,AMPN,AT,AMW,AKRST	
025050	15	COMMON/PARH1/ICHN	
025060	16	IL=0	93200
025070	17	IF(STFLAG)IL,10,50	
025080	18	IF(WDOT150,20,50	
025090	19	RETURN	93240
025100	20	50 AINC(1)=-1.	
025110	21	IK=KPLANE-1	
025120	22	DO 55 I=1,IK	
025130	23	AINCX = AINCIN(I)	
025140	24	AINCY = AINCIN(I+1)	
025150	25	IF(1.GT.1) GO TO 52	
025160	26	111=0	
025170	27	11J=0	
025180	28	52 CALL TISUB(IE)	
025190	29	IF(1CHN.EQ.5) RETURN	
025200	30	11(1E)32,55,32	
025210	31	55 CONTINUE	
025220	32	32 IF(PONBAR.GT.0.0) GO TO 34	
025230	33	GO TO 40	
025240	34	34 ER=ERBAR*(PON/PONBAR)**EREXP	
025250	35	IF(TIME.LT.DELT) DELDT=0.0	
025260	36	DELD=DELD+ER*DELT*2.	
025270	37	GO TO 46	
025280	38	40 IF(NDT)42,42,44	
025290	39	42 DELDT=0.0	
025300	40	GO TO 46	
025310	41	44 CALL XLIN(TIMEUT,TDELUT,NDT,TIME,DELD,26)	

I N D E X

SUBROUTINE MODTSB(IE)

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U

025320	42	46 DT = DTINT*DELDY
025330	43	AT=PI*DT**2/4.
025340	44	RETURN
025350	45	END

SYMBOL		REFERENCES							
10	-	17	17	18					
20	-	18	19						
32	-	30	30	32					
34	-	32	34						
40	-	33	38						
42	-	38	38	39					
44	-	38	41						
46	-	37	40	42					
50	-	17	18	18	20				
52	-	25	28						
55	-	22	30	31					
ADCLL	-	1000							
ACCLL	-	1000							
AMH	-	1100							
AIRC	-	800	20						
AIRCH	-	1000							
AIRCH	-	300	23	24					
AIRCH	-	1400							
AIRCA	-	1200	23						
AIRCY	-	1200	24						
AJBHLD	-	1100							
AJBHLD	-	1100							
AJBHLD	-	1100							
AJBHLD	-	1100							
AKKST	-	1400							
AKACH	-	1000							
AKPH	-	1400							
AKH	-	1400							
AKZ	-	400							
AKIBU	-	1000							
AKLOP'S	-	1000							
AKN	-	400							
AKO	-	300							
AKODH	-	800							
AP	-	1300							
APH	-	1000							
AT	-	1400	43						
BRNGUT	-	1300							
CH	-	400							
COMA	-	1000							
CUMB	-	1100							
COMM	-	1200							
CONSTS	-	200							
DL	-	400							
DELUT	-	900	35	36	36	39	41AG	42	
DELT	-	1000	35	36					
DELTA	-	1400							
DELTSS	-	600							

DEL1ST	-	6C0			
DEL1TO	-	6C0			
D1S	-	14C0			
DT	-	4C0	42	43	
D1INT	-	11C0	42		
DUMYU	-	9C0			
ER	-	34	36		
ERDAN	-	5C0	34		
ERLAP	-	5C0	34		
GNUT	-	2C0			
I	-	22	23	24	25
ICHN	-	15C0	29		
IE	-	1AG	16	28AG	30
III	-	13C0	26		
IJJ	-	13C0	27		
IIS	-	13C0			
IK	-	21	22		
INPUT1	-	3C0			
INPUTI	-	4C0			
INPUTJ	-	5C0			
INPUTH	-	6C0			
INPUTO	-	7C0			
IS1	-	13C0			
IS2	-	13C0			
KPLANE	-	7C0	21		
MODTSB	-	1LY			
NDT	-	5C0	38	41AG	
NI	-	13C0			
NSLCT	-	13C0			
NTABE	-	13C0			
P	-	14C0			
PARHU	-	13C0			
PARHF	-	14C0			
PARHS	-	15C0			
PH	-	14C0			
PI	-	2C0	43		
PMAX	-	13C0			
PMIH	-	13C0			
PON	-	14C0	34		
PONBAR	-	5C0	32	34	
PKNT	-	10C0			
RADIAN	-	2C0			
RF	-	3C0			
RFDH	-	8C0			
RFX	-	12C0			
RFY	-	12C0			
RI	-	3C0			
RIDH	-	8C0			
SCUR	-	13C0			
STDYST	-	4C0			

I N D E X

SUBROUTINE MODTSO(IE)

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STFLAG	-	6C0	17
T	-	14C0	
TAUMA	-	12C0	
TAUMY	-	12C0	
TAUM	-	3C0	
TAUMA	-	12C0	
TAUMY	-	12C0	
TDELUT	-	5C0	41AG
TIME	-	14C0	35 41AG
TIMEUT	-	5C0	41AG
TIMEH	-	14C0	
TISUB	-	28	
TOFLAG	-	13C0	
U	-	14C0	
UT	-	14C0	
VFPP	-	12C0	
WDOT	-	13C0	18
WDOTD	-	13C0	
WDOTI	-	14C0	
WOKKA	-	8C0	
XBH	-	11C0	
XBH	-	11C0	
XLII	-	41	
ZCALC	-	16C0	

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025360      1      SUBROUTINE NSCL(IOPT)
025370      2      IMPLICIT REAL (A-H,O-Z,H)
025380      C      IOPT=1  CORRECT FOR CONTOUR EFFECTS AND RETURN
025390      C      IOPT=2  STEADY STATE CALCULATIONS AND RETURN
025400      C      IOPT=3  NON STEADY STATE CALCULATIONS AND RETURN
025410      3      COMMON/CONSTS/GH01,PI,RADIAN
025420      4      COMMON/INPUT4/NGLO(10),APORT(10), RPL(50,10),ALPPL(50,10),
025430      1      TAUND(50),ABND(50),APRTSC(10,8),TAUN(50),ABN(50),NGLOHD,NGEOMN
025440      5      COMMON/INPUT6/CLSTAK,GAMA,R,NESTR,PRES(20),CSIN(20),GAMAG(20),
025450      1      AMW(20),TCOM(20),NCSOE
025460      6      COMMON/INPUT1/ANZ,CH,DE,DT,ANH
025470      7      COMMON/INPUT0/KPLANE
025480      8      COMMON/INPUT0/DELF,PA,PHI,HCO,DELF2,KDUNP(72)
025490      9      COMMON/COMA/DELTA,APHI,WDOT1,ANBU,TIMEX,UT,ANLUPS,ACCEL,
025500      1     ALCYL,PRNT(101,15),A1NCH1,AMACH,ZCALC(101)
025510      10     COMMON/COMG/TAUZ(101,8),R0Z(101,8),PD(101),TAUNDP(101,8),RU,VF,
025520      10     DWDOT,VP
025530      11     COMMON/PARM0/KP,PHIN,PHAX,WDOT,111,112,WDOT0,NSLOT,NTARE,TUFLAG,
025540      1     URDOT,115,151,152,NI,SCUR(10,2)
025550      12     COMMON/PARM1/PH,TIML,A1NCW,1,P,DELTA,U,PON,D15,AMPN,AT,AMW,AKRST
025560      13     COMMON/PARM5/ICNN
025570      14     COMMON/PARM2/ANSL0T,PU
025580      15     COMMON/PARM3A/TO,IFLAG
025590      16     COMMON/PARM4/ TASUB(20),TRSUB(20),NPSUB
025600      17     COMMON/PARM5/VNUZ50,THETEX,SIRATC,NCUNT
025610      18     COMMON/PARM6/ VFNA,VFNB,VCHA,VCHD
025620      19     COMMON/PARM7/AAHA,AAHB
025630      20     COMMON/PARM8/PIAT,AENT,UJA,PIA,PIB,AZA,VGA,PMA,PHAZ,TMA,VGAZ,
025640      5     MDETA,UID,AIA,MDB
025650      21     COMMON/PARM9/DWDOTA,DWDOTB,DWDTC,DWDTB,PIUT,TIB,MIB
025660      22     COMMON/PARMAN/ AIB,AZB
025670      23     COMMON/DUNYU/TIMP,UTMP
025680      24     COMMON/DUNYX/ VGBZ,PMBZ,VGB,TIMEX,PHB,IPASS
025690      C      NAMELISTS USED FOR DEBUG PRINT
025700      25     NAMELIST/NP1B/ ITP1B,P2BT,R01B,R02B,DWDOT,UTMP,TTMP,PTMP,RH01B,
025710      5     RH01MP,AK,AT,AENT,AIA,AZA,10,GAMA,R,DT,PI
025720      26     NAMELIST/NP2B/ ITP2B,R01A,R02A,DWDOT,MDETA,MUETA,TBETA,CBETA,
025730      5     UBETA,PBETA,PON
025740      27     NAMELIST/NP3B/ITP1B,CIB,MIB,TIBG,PIBG,VGA,VGAZ,VGB,VGBZ,PMA,PHAZ,
025750      5     PMB,PMBZ,R01B,P2BT,DWDOT,TNB,DWDTC,MDB,UID,UMB,PIB,TEMP,
025760      5     AK,AT,AENT,AIA,AZA,TU,R,GAMA,DT,PI,VCHA,VCHD,VFNA,VFNB,VNUZ50
025770      28     NAMELIST/NP4B/ITP1B,UID,TO,GAMA,K,TIB,11BG,TEMP
025780      29     NAMELIST/NP5B/ITP2B,R01A,PIA,PIB,R02A,DWDOT,TMA,MDETA,DWDTC,
025790      5     MBETA,THEIA,CBETA,UBETA,UMA,PUETA,PMA,PHAZ
025800      C
025810      30     GO TO (10,100,100),IOPT
025820      C      CORRECT FOR CONTOUR EFFECTS
025830      31     10 IF (THETEX.EQ.0.0 .AND. SIRATC.EQ.0.0) GO TO 15
025840      32     IF (THETEX.GT.0.0 .AND. SIRATC.GT.0.0) GO TO 15
025850      33     IF (THETEX.GT.0.0) AN2=(AN2+THETEX)/2.0

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02506*      34      IF(SIRATC,LE,0.0) GO TO 11
02507*      35      AN2H=PI*AN2/180.
02508*      36      AN2H=ACOS(SIRATC*(COS(AN2H)+1.0)-1.0)
02509*      37      AN2=(180.-AN2H)/PI
02510*      38      11 CONTINUE
02511*      39      RETURN
02512*      40      15 WRITE(6,16) THETEX,SIRATC
02513*      41      16 FORMAT('ILKROH IN DATA INPUT TO NSCE, 10PT=1, THETEX=,E15.8,
02514*      42      3 SX,SIRATC=,E15.8)
02515*      42      GO TO 9000
02516*      43      C      STEADY STATE CALCULATIONS
02517*      43      100 CONTINUE
02518*      44      C      INITIALIZATION
02519*      45      IF(TIME,GT,0.0) GO TO 105
02600*      46      AT=PI*DT*.2/4.0
02601*      47      PIB=PA
02602*      48      DNDUTB=D.C
02603*      49      DNDIA=D.C
02604*      50      DNDTH=D.C
02605*      51      PIH=PA
02606*      52      TIB=T
02607*      53      MIB=D.C
02608*      54      TIMLZ=D.C
02609*      55      FIA=PA
02610*      56      PIB=PA
02611*      57      VGA=VCNA-VFNA
02612*      58      VGB=VCNB-VFNB-VNDZSB
02613*      59      105 TIA=T
02614*      60      DIA=U
02615*      61      PIAT=PO
02616*      62      PIA=P
02617*      63      ITPIB=D
02618*      64      ITPIB=D
02619*      65      IITIB=D
02620*      66      ALNT=PI*TRSUB(1)*.2
02621*      67      AR=ALNT/AT
02622*      68      AIA=APORT(KPLANE)
02623*      69      AZA=AIH*ACNT
02624*      69      C*** PRELIMINARY CALCULATIONS FOR REGION B
02625*      70      IF(INCSTR,LE,0) GO TO 110
02626*      71      CALL ALIN(PRESS,TCOHH,NCSTR,PIAT,10,31)
02627*      72      CALL ALIN(PRESS,GAMAG,NCSTR,PIAT,GAMA,32)
02628*      73      CALL ALIN(PRESS,AMWG,NCSTR,PIAT,AMW,33)
02629*      74      R=1545.064/AMW
02630*      75      110 PZBT=PIAT
02631*      76      RHOIB = PZBT/(12.*R*TO)
02632*      77      P=PZBT
02633*      78      IS=D
02634*      79      CALL RUSUB(15)
02635*      79      DNDUT=RB*AANB*DELF

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026360      80      UID = -DWDOT/(12.*RHOIB*AIB)
026370      81      IF(10PT.EQ.3) GO TO 190
026380      82      UTMP=UID
026390      83      P1B=P2BT-.5*RHOIB*UID**2
026400      84      P1MP=P1B
026410      85      RHO1MP=RHOIB
026420      86      IF(U1B.GE.0.0) GO TO 120
026430      87      RHO1MP=-DWDOT/(12.*UTMP*A1B)
026440      C*** ITERATION LOOP
026450      88      120 P=P2BT
026460      89      IS=0
026470      90      CALL RNSUB(15)
026480      91      R02B=R0
026490      92      P=P1MP
026500      93      IS=0
026510      94      CALL RNSUB(15)
026520      95      R01B=R0
026530      96      IF(NCSTR.LE.0) GO TO 130
026540      97      CALL XLIN(PRESS,TCOMB,NCSTR,PTMP,TO,34)
026550      98      CALL XLIN(PRESS,GAMAG,NCSTR,P1MP,GAMA,35)
026560      99      CALL XLIN(PRESS,AMW,NCSTR,P1MP,AMW,36)
026570      100      R=1545.064/AMW
026580      101      DWDOT=(R01B+R02B)/2. * AAMB*DELF
026590      102      DO 135 J=1,8
026600      103      135 R0ZIN(1+2,J)=(R01B+R02B)/2.0
026610      104      DWDOTH = DWDOT
026620      105      UTMP = -DWDOT/(12.*RHO1MP*A1B)
026630      106      T1MP = 10-(GAMA-1.0)*UTMP**2/(2.*UNOT*R*GAMA)
026640      107      P1MP = P2BT + 2.*DWDOT*UTMP/(GNOT*(A1B+A2B))
026650      108      RHO1B=PTMP/(12.*R*T1MP)
026660      109      TEMP = RHO1MP-RHO1B
026670      C      WRITE(6,RP1B)
026680      110      IF(ABS(TEMP)/RHO1MP .LE. .0001) GO TO 190
026690      111      RHO1MP = RHO1B
026700      112      ITP1B = ITP1B + 1
026710      113      IF(ITP1B.LE.21) GO TO 120
026720      114      WRITE(6,1000) PTMP,RHO1B,RHO1MP
026730      115      1000 FORMAT(' ',30(' '),/ ' *** ERROR IN NSCE STEADY STATE CALCULATION-
026740      REGION B - PRESSURE ITERATION FAILED!/' PTMP=',F10.4,3X,'RHO1B=',
026750      $F10.8,3X,'RHO1MP=',F10.4,/ ' ',30(' '))
026760      116      GO TO 9000
026770      117      190 P1B=PTMP
026780      118      T1B=T1MP
026790      119      U1B=UTMP
026800      120      M1B=SQRT(12.*(T0-T1B))/((GAMA-1.)*T1B)
026810      121      R01B=DWDOT
026820      122      P2BT=P1B*(1.+(GAMA-1.)/2.*M1B**2)+*(GAMA/(GAMA-1.0))
026830      C*** SECTION A CALCULATIONS
026840      123      150 P=P1A
026850      124      IS=0

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OF POOR QUALITY

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02666*      125      CALL RDSUB(15)
02667*      126      RB1A=RB
02668*      127      P=PIB
02669*      128      IS=0
02670*      129      CALL RDSUB(15)
02671*      130      RD2A=RB
02672*      131      DWDOT=(RB1A+RD2A)/2. * AANA*DELF
02673*      132      DO 155 J=1,8
02674*      133      155 RDZ(NI+1,J)=(RB1A+RD2A)/2.0
02675*      134      DWDOT = DWDOT
02676*      135      MDUBETA= DWDOT + DWDOT + MDIB
02677*      136      IF(INCSTR.LE.G) GO TO 160
02678*      137      CALL XLINIPRESS,TCOMR,NCSTR,PIA,IU,37)
02679*      138      CALL XLINIPRESS,GAMAG,NCSTR,PIA,GAMA,38)
02700*      139      CALL XLINIPRESS,AMWG,NCSTR,PIA,AMW,39)
02701*      140      R=1545.864/AMW
02702*      141      TMA=1.0
02703*      142      CALL SUBSON(ICHUKE,10PT)
02704*      143      IF(ICHUKE.EQ.0) GO TO 170
02705*      144      160 CALL MACH(AR,GAMA,MDUBETA)
02706*      145      TBETA = TU/(1.+(GAMA-1.)/2.*MDUBETA**2)
02707*      146      CBETA = SQRT(GNOT*GAMA*R*TBETA)
02708*      147      UBETA = CBETA*MDUBETA
02709*      148      PBETA = (1./ALNT)*(1./GNOT)*(WDOT-U-MDBETA*UBETA+MDIB*UIB) *
02710*      149      S PIA=AIA-PIB*AIB + (PIA*PIB)/2. * (A2A-A1A)
02711*      149      PON =PBETA*(1.+(GAMA-1.)/2.*MDUBETA**2)*(GAMA/(GAMA-1.))
02712*      149      C** CHECK FOR CONVERGENCE
02713*      149      C
02714*      150      170 IF(ABS(PON-PIBT)/PIBT.LE.D*0001) GO TO 300
02715*      151      ITPB=0
02716*      152      IF(ITP2B.GT.0) GO TO 180
02717*      153      P2OLD=P2BT
02718*      154      IF(PON.LT.PIBT ) P2BT=P2BT*0.99
02719*      155      IF(PON.GT.PIBT ) P2BT=P2BT*1.01
02720*      156      PRABO=PIBT/PON
02721*      157      ITP2B=ITP2B+1
02722*      158      GO TO 120
02723*      159      180 PRABN=PIBT/PON
02724*      160      SLOPE=(P2OLD-P2BT)/(PRABO-PRABN)
02725*      161      BINT = P2BT-SLOPE*PRABN
02726*      162      PRABO=PRABN
02727*      163      P2OLD = P2BT
02728*      164      P2BT = SLOPE*BINT
02729*      165      ITP2B = ITP2B + 1
02730*      166      IF(ITP2B.LI.21) GO TO 120
02731*      167      WRITE(6,1010) PTHP,PIU,P2BT,PBETA
02732*      168      1010 FORMAT(' ',30(' '),/ ' *** ERROR IN NSCE STEADY STATE CALCULATIONS
02733*      168      S= REGION A - PRESSURE ITERATION FAILED/' PTHP=' ,F10.4,3X,'PIB=',
02734*      168      SF10.4,3X,'P2BT=' ,F10.4,3X,'PBETA=' ,F10.4/ ' ',30(' '),/
02735*      169      GO TO 9000

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027360      C*** NON-STEADY STATE CALCULATIONS-PRELIMINARY
027370      170 IF (TIME.EQ.0.0) RETURN
027380      171 C1B=SQRT(GAMA*GNUT*R*TD)
027390      172 H1B=ABS(U1B/C1B)
027400      173 T1BG=TD/(1.+(GAMA-1.)*H1B**2/2.0)
027410      174 P1BG=12.*KH01B*R*T1BG
027420      175 IF (TIME.EQ.T1MLZ) GO TO 195
027430      176 T1MLZ=T1ML
027440      177 IPASS=0
027450      178 195 IPASS=IPASS+1
027460      179 IF (IPASS.GT.1) GO TO 198
027470      180 VGAZ=VGA
027480      181 VGBZ=VGB
027490      182 PHAZ=PHA
027500      183 PHBZ=PHB
027510      184 198 VGA=VCHA-VFHA
027520      185 VGB=VCNB-VFNB-VH0ZSB
027530      C*** NON-STEADY STATE CALCULATION-ITERATION LOOP
027540      C*** REGION B ITERATIONS
027550      200 P=P1BG
027560      187 IS=J
027570      188 CALL RBSUB(IS)
027580      189 R01B=RB
027590      190 P=PZHT
027600      191 IS=J
027610      192 CALL RBSUB(IS)
027620      193 R02B=RB
027630      194 DWDOT=(R01B+R02B)*AANB*DELF/2.0
027640      195 DO 205 J=1,N
027650      196 R0Z(NI+2,J)=(R01B+R02B)/2.0
027660      197 205 CONTINUE
027670      198 DWDOTB=DWDOT
027680      C*** MASS STORAGE TERMS
027690      199 PHB=(PING + PZHT)/2.0
027700      200 THB=(T1BG + TD)/2.0
027710      201 DWDI=(1./(12.*R*THB*DELT))*(2.0*PHB*VGB-PHB*VGBZ-PHBZ*VGB)
027720      202 DWDIB=DWDI
027730      203 N01B=DWDOT-DWDI
027740      204 U1B=-N01B*R*T1BG/(P1BG*A1B)
027750      205 U1B=U1B/2.0
027760      206 TERM1=VGB*U1B*(PHB-PHBZ)/(12.*GNUT*R*THB*DELT)
027770      207 TERM2=PHB*U1B*(VGB-VGBZ)/(12.*GNUT*R*THB*DELT)
027780      208 P1B=PZHT+(2.0/(A1B+A2B))*(TERM1+TERM2+U1B*H01B/GNUT)
027790      209 T1MP=PHB-P1BG
027800      C WRITE(6,NP3B)
027810      210 IF (ABS(T1MP)/PING.LE.0.0001) GO TO 230
027820      211 IF (IP1B.GT.0) GO TO 210
027830      212 P1B=P1BG
027840      213 P1B=P1B
027850      214 P1BG=P1BG*.99

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02706*      215      ITP10=ITP10+1
02707*      216      GO TO 200
02708*      217      210 ITP10=ITP10+1
02709*      218      IF (ITP10.LT.211) GO TO 220
02710*      219      WRITE(6,1020) P10,P10G,T10G
02711*      220      1020 FORMAT(' ',30(' '),/,' *** ERROR IN NSCE NON-STEADY STATE CALCULAT
02712*      SIGN-REGION B - PRESSURE ITERATION FAILED/' P10=' ,F10.4,3X, 'P10G='
02713*      S ,F10.8,3X, 'T10G=' ,F10.4/' ',30(' '))
02714*      GO TO 9000
02715*      221      220 SLOPE=(P10G-P100)/(P10/P10G-P10C/P100)
02716*      222      BINT=P10G-SLOPE*P10/P10G
02717*      223      P10C=P10
02718*      224      P100=P10G
02719*      225      P10G=SLOPE*BINT
02720*      226      GO TO 200
02721*      227      230 U10=MD10*R*T10G/(P10*A10)
02722*      228      IF (NCSTR.LT.0) GO TO 240
02723*      229      CALL XLIN(PRESS,TCOMB,NCSTR,P10,TO,40)
02724*      230      CALL XLIN(PRESS,GAMAG,NCSTR,P10,GAMA,41)
02725*      231      CALL XLIN(PRESS,AMAG,NCSTR,P10,AMW,42)
02726*      232      K=1545.864/AMW
02727*      233      240 T10=TO - (GAMA-1.1)*U10**2/(2.0*GNU1*GAMA*R)
02728*      234      TEMP=T10G-T10
02729*      235      WRITE(6,NP40)
02730*      236      IF (ABS(TEMP)/T10G.LT.0.001) GO TO 270
02731*      237      IF (IT10.GT.0) GO TO 250
02732*      238      T10=T10G
02733*      239      T10C=T10
02734*      240      T10G=T10G*.995
02735*      241      ITP10=0
02736*      242      P10G=P10
02737*      243      IT10=IT10+1
02738*      244      GO TO 200
02739*      245      250 IT10=IT10+1
02740*      246      IF (IT10.LT.11) GO TO 260
02741*      247      WRITE(6,1030) T10,T10G,P10
02742*      248      1030 FORMAT(' ',30(' '),/,' *** ERROR IN NSCE NON-STEADY STATE CALCULAT
02743*      SIGN-REGION B - TEMPERATURE ITERATION FAILED/' T10=' ,F10.4,3X,
02744*      S 'T10G=' ,F10.8,3X, 'P10=' ,F10.4/' ',30(' '))
02745*      GO TO 9000
02746*      249      260 SLOPE=(T10G-T100)/(T10/T10G-T10C/T100)
02747*      250      BINT=T10G-SLOPE*T10/T10G
02748*      251      T10C=SLOPE*BINT
02749*      252      P10G=P10
02750*      253      ITP10=0
02751*      254      GO TO 200
02752*      255      270 M10=ABS(U10/SQRT(GNU1*GAMA*R*T10))
02753*      256      K1010=P10/(12.0*R*T10)
02754*      257      P10T=P10*(TO/T10)**(GAMA/(GAMA-1.1))
02755*      258      C*** NON-STEADY STATE CALCULATIONS FOR REGION A

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G28360 259 IF(NCSTR.LE.0) GO TO 280
G28370 260 CALL XLIN(PRESS,TCOMB,NCSTR,PIA,TU,43)
G28380 261 CALL XLIN(PRESS,GAMAG,NCSTR,PIA,GAMA,44)
G28390 262 CALL XLIN(PRESS,AMWG ,NCSTR,PIA,AMW,45)
G28400 263 R=1545.864/AMA
G28410 264 260 PMA=(PIA+PIB)/2.0
G28420 265 P=PIA
G28430 266 IS=J
G28440 267 CALL RUSUB(IS)
G28450 268 R01A=RB
G28460 269 P=PIB
G28470 270 IS=G
G28480 271 CALL RUSUB(IS)
G28490 272 R02A=RB
G28500 273 DADOT=(RB1A+RB2A)/2.0+AANA*DELTA
G28510 274 DO 282 J=1,8
G28520 275 282 RBZ(NI+1,J)=(RB1A+RB2A)/2.0
G28530 276 DADOTA = DNDOT
G28540 277 TMA=(11A*WDOT+TO*DWDOT+TIB*HDIB)/(WDOT+DWDOT+HDIB)
G28550 278 MBETA = WDOT*DNDOT+MDIB = VGA*(PMA-PMZ)/(12.*R*TMA*DELTA)
G28560 279 S =PMA*(VGA-VGAZ)/(12.*R*TMA*DELTA)
G28570 280 DADTA = (VGA*(PMA-PMZ)+PMA*(VGA-VGAZ))/(12.*R*TMA*DELTA)
G28580 281 CALL SUNSON(ICHOK,IOPT)
G28590 282 IF(ICHOK.EQ.0) GO TO 285
G28600 283 CALL MACH(AR,GAMA,MBETA)
G28610 284 TBETA=TO/(1.+(GAMA-1.0)/2.*MBETA**2)
G28620 285 CBETA=SQRT(GNOT*GAMA*R*TBETA)
G28630 286 UBETA=MBETA*CBETA
G28640 287 UMA=(UIA+UBETA)/2.0
G28650 288 PBETA = 1./ALNT*(PIA*AI1A-PIB*AI1B+(PIA+PIB)
G28660 289 S * (IAZA-A1A)/2.0 - VGA*UMA*(PMA-PMZ)
G28670 290 S / (12.*GNOT*R*TMA*DELTA)-PMA*UMA
G28680 291 S * (VGA-VGAZ)/(12.*GNOT*R*TMA*DELTA)
G28690 292 S -UBETA*MBETA/GNOT + UIA*NDOT/GNOT
G28700 293 S + UIB*MDIB/GNOT)
G28710 288 PON=PBETA*(1.+(GAMA-1.0)/2.*MBETA**2)*(GAMA/(GAMA-1.0))
G28720 289 C WRITE(6,NPBU)
G28730 290 285 IF(ABS(PON-PIBT)/PIBT.LE.0.0001) GO TO 300
G28740 291 ITP1B=J
G28750 292 ITP1B=J
G28760 293 IF(ITP2R.GT.0) GO TO 290
G28770 294 P2OLD=P2BT
G28780 295 IF(PON.LT.P1BT ) P2BT=P2BT*0.99
G28790 296 IF(PON.GT.P1BT ) P2BT=P2BT*1.01
G28800 297 PHABO=PIBT/PON
G28810 298 ITP2B=ITP2B+1
G28820 299 GO TO 290
G28830 290 PRABN=PIBT/PON
G28840 300 SLOPE=(P2OLD-P2BT)/(PHABO-PRABN)
G28850 301 BJNT=P2BT-SLOPE*PRABN

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C2806*      302      PRABO=PRABH
C2807*      303      PZOLD=PZOT
C2808*      304      PZOT=SLOPE+DINT
C2809*      305      ITP2B=ITP2B+1
C2810*      306      IF(ITP2B.LT.21) GO TO 200
C2811*      307      WRITE(6,1040) PZBT,PZOLD,PBETA,PID,TIU
C2812*      308      1040 FORMAT(' ',J0(' '),'/ ' *** ERROR IN NSCE NON-STEADY STATE CALCULAT
C2813*      309      SION-REGION A - PRESSURE ITERATION FAILED'/' PZBT=' ,F10.4,JX,
C2814*      310      S'PZOLD=' ,F10.4,JX, 'PBETA=' ,F10.4,JX, 'PID=' ,F10.4,JX, 'TIU=' ,
C2815*      311      S'F10.4/' ' ,J0(' '))
C2816*      312      GO TO 9000
C2817*      313      C*** TOTAL CONVERGENCE ACHIEVED - SET VALUES AND RETURN
C2818*      314      300 CONTINUE
C2819*      315      KDOT=MBBETA
C2820*      316      P=PBETA
C2821*      317      PO=PON
C2822*      318      U=UBETA
C2823*      319      Y=THETA
C2824*      320      ANACH = MBETA
C2825*      321      AP=A2A
C2826*      322      DADDT=DNDOTA
C2827*      323      MB=KDOT/(NI+1,1)
C2828*      324      RETURN
C2829*      325      9000 ICHH=5
C2830*      326      RETURN
C2831*      327      END

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SYMBOL	REFERENCES
10	30 31
11	34 38
16	31 32 40
16	40NR 41
100	30 43
105	44 58
110	69 74
120	86 88 113 158 166
130	96 101
135	102 103
140	110 117
150	123
155	132 133
160	136 144
170	143 150
180	152 159
190	81 176
195	175 178
198	179 184
200	186 216 227 244 255 298 306
205	195 197
210	211 217
220	218 222
230	210 224
240	229 234
250	237 245
260	246 256
270	235 256
280	269 264
282	274 275
285	281 289
290	292 299
300	150 289 310
1000	114NR 115
1010	167NR 168
1020	219NR 220
1030	247NR 248
1040	307NR 308
Y000	42 116 169 221 249 309 321
A1A	20CU 25NR 27NR 67 148 148 287 287
A1B	22CU 60 87 105 107 148 204 208 228
	487
A2A	20CU 25NR 27NR 68 140 287 317
A2B	22CU 107 208
AANA	19CU 131 273
AANB	19CU 79 101 194
ABCTL	9CU
ABHD	4CU

SUBROUTINE NSCE(LOPT)

[illegible]

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[illegible]

NGEOND	-	4CO									
NGEOMH	-	4CO									
NI	-	11CO	103	133	196	275	319				
NP1B	-	25NH									
NP2B	-	26NH									
NP3B	-	27NH									
NP4B	-	28NH									
NP5B	-	29NH									
NP50B	-	16CO									
NSCE	-	1EY									
NSLUI	-	11CO									
NTABE	-	11CO									
P	-	12CO	61	76	80	92	123	127	186	190	265
		269	312								
P1A	-	26CO	29NH	61	123	137AG	138AG	139AG	140	148	260AG
		261AG	262AG	264	265	287	287				
P1AT	-	26CO	60	70AG	71AG	72AG	74				
P1B	-	26CO	27NH	29NH	46	83	84	117	122	127	148
		148	167WR	260	209	213	219WR	222	223	224	228
		230AG	231AG	232AG	242	247WR	253	257	258	264	269
		287	287	367WR							
P1BC	-	213	222	224							
P1BG	-	27NH	174	186	199	204	209	210	212	214	214
		219WR	222	222	223	223	225	226	242	253	
P1BU	-	212	222	222	225						
P1BI	-	21CO	56	122	150	150	154	155	156	159	258
		289	289	294	295	296	299				
P2BT	-	25NH	27NH	74	75	76	83	88	107	153	154
		154	155	155	160	161	163	164	167WR	190	199
		208	293	294	294	295	295	300	301	303	304
		307WR									
P20LD	-	163	160	163	293	300	303	307WR			
PA	-	8CO	46	56	59	55					
PANNA	-	15CO									
PANNAG	-	16CO									
PANNAN	-	17CO									
PANNAL	-	18CO									
PANNAJ	-	19CO									
PANNAK	-	26CO									
PANNAL	-	21CO									
PANNAN	-	22CO									
PANNH	-	11CO									
PANNH	-	12CO									
PANNH	-	13CO									
PANNH	-	14CO									
PBETA	-	26NH	29NH	148	149	167WR	287	288	307WR	312	
PD	-	16CO									
PI	-	12CO									
PII	-	8CO									
PI	-	3CO	25NH	27NH	35	37	45	65			

[illegible]

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[illegible]

SUBROUTINE PARTBN(IPBNFL,IS)

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029120      1      SUBROUTINE PARTBN(IPBNFL,IS)
029130      2      COMMON/BLK029/AINCWS,TAUMHI,RFS,THETA(100,8),AINCWS,IFLS,KRPN
029140      3      COMMON/INPUT1/AINCIN(16),ANGI(16),KF(16,8),RI(16,8),TAUW
029150      4      COMMON/INPUT4/DGLU(16),APORT(16),TAUPL(50,16),ALPPL(50,16),
029160      5      TAUMD(50),AHHD(50),APRTSC(16,8),TAUHS(50),AUN(50),NGLOHD,NGEOMN
029170      6      COMMON/INPUTU/DELF,PA,PHI,HCO,DELZ,KDUMP(72)
029180      7      COMMON/WORKA/AINC,ANO,KF,RI
029190      8      COMMON/DUMPT/AFX,AFY,ALPHI,TAUMW,THOLD
029200      9      COMMON/CONA/DLLT,APHI,WDOT1,ANIBU,11NEW,UI,ANLOPS,ACCEL,
029210      10      ABCYL,PKMT(101,15),AINCII,ANACH,ZCALC(101)
029220      11      COMMON/CONG/TAUZ(101,8),RDZ(101,8),PD(101),TAUWDP(101,8),RB,VF,
029230      12      DWDOT,VP
029240      13      COMMON/CONH/TAUHX,TAUHY,AINCX,KFX,TAUKX,AINCY,KFY,TAUWY,VFPP
029250      14      COMMON/CONO/REHI,RHHI,ALPX,ALPY,APX,APY
029260      15      COMMON/PARKU/AP,PHIN,PHAX,WDOT,111,11J,WDOTD,NSLOT,NTADE,
029270      16      IOFLAG,BRNOUT,115,151,152,NI,SCUR(16,2)
029280      17      COMMON/PARKI/PH,TINE,AINCW,T,P,DLLIA,U,PON,DIS,AMPH,AI,AMW,AKRST
029290      18      COMMON/PARKU/ALP
029300      19      IPBNFL=0
029310      20      IFLS=0
029320      21      TAUMW=TAUWDP(111,15)
029330      22      TAUMHI=TAUWDP(111-1,15)
029340      23      TSAVW=TAUMW
029350      24      TSAVHI=TAUMHI
029360      25      ISS=0
029370      26      IFW=0
029380      27      IAFI=0
029390      28      RFS=RF
029400      29      REHI=REHI
029410      30      AINCWS=AINCW
029420      31      AINCWS=AINCW
029430      32      DO 5 I=1,NSLOT
029440      33      IF(ZCALC(111-1),LE,SCUR(1,1).AND,ZCALC(111),GT,SCUR(1,1)) GO TO 2
029450      34      1 IF(ZCALC(111-1),LT,SCUR(1,2).AND,ZCALC(111),GE,SCUR(1,2)) GO TO 3
029460      35      IF(SCUR(1,1),LE,ZCALC(111-1).AND,SCUR(1,2),GE,ZCALC(111)) GO TO 100
029470      36      GO TO 5
029480      37      2 ISS=1
029490      38      IFW=1
029500      39      GO TO 1
029510      40      3 ISS=1
029520      41      IAFI=1
029530      42      5 CONTINUE
029540      43      IF(ISS.EQ.0) GO TO 9
029550      44      IF(IFW.EQ.1) TAUMW=TAUWDP(111,15)
029560      45      IF(IAFI.EQ.1) TAUMHI=TAUWDP(111-1,15)
029570      46      IF(TAUZ(111-1,15),GT,(TAUMHI-.0099).AND,TAUZ(111,15),GT,(TAUMW-
029580      47      .0099)) GO TO 90
029590      48      IF(TAUZ(111-1,15),LT,(TAUMHI-.0099).AND,TAUZ(111,15),LT,(TAUMW-
029600      49      .0099)) GO TO 100
029610      50      IF(TAUZ(111-1,15),LT,(TAUMHI-.0099)) TAUSLT=TAUZ(111-1,15)

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02962*      45      IF (TAUZ(111,15).LT.(TAUHW-.0099))TAUSLT=TAUZ(111,15)
02963*      46      IF (IFW.GT.0)TAUMSL=TSVW
02964*      47      IF (IAFT.GT.0)TAUMSL=TSVHI
02965*      48      IF (TAUSLT.LT.(TAUMSL-.0099)) GO TO 100
02966*      49      9 IF (TAUZ(111,15).LT.(TAUHW-.0099)) GO TO 30
02967*      50      ALP=C.0
02968*      51      IF (TAUZ(111-1,15).LT.(TAUHHI-.0099)) GO TO 10
02969*      52      ALPHI=C.0
02970*      53      GO TO 100
02971*      54      10 IPBNFL=1
02972*      55      ALPHA=ATAN((RFY-RFX)/(AINCY-AINCX))
02973*      56      RF=RFX+(RFY-RFX)*(ZCALC(111)-AINCX)/(AINCY-AINCX)
02974*      57      RFI= RFX+(RFY-RFX)*(ZCALC(111-1)-AINCX)/(AINCY-AINCX)
02975*      58      IF (IFLS.GT.0) GO TO 50
02976*      59      AU=(ZCALC(111)-ZCALC(111-1))/COS(ALPHA)
02977*      60      GU=(ZCALC(111)-ZCALC(111-1))*TAN(THETA(111-1,15))
02978*      61      AF=GU*(RFI-RF)
02979*      62      AB=TAUHHI-TAUZ(111-1,15)
02980*      63      AC=AU*AB/AF
02981*      64      AH=AC*COS(ALPHA)
02982*      65      AINCW=AINCH
02983*      66      AINCW=ZCALC(111-1)+AH
02984*      67      NCX=NGEO(KRPH)-1
02985*      68      NCY=NGEO(KRPH+1)-1
02986*      69      ALLPX=ALPPL(NCX,KRPH)
02987*      70      ALLPY=ALPPL(NCY,KRPH+1)
02988*      71      ALP=ALLPX+(ALLPY-ALLPX)*(AINCW-AINCX)/(AINCY-AINCX)
02989*      72      DELZ=AINCW-AINCHI
02990*      73      I11H=111-1
02991*      74      WRITE(6,ZDC)TIME,IS,111,ZCALC(111),I11H,ZCALC(I11H),AINCW,AINCHI,
02992*      *DELZ,ALP,ALPHI
02993*      75      GO TO 100
02994*      76      30 IF (TAUZ(111-1,15).LT.(TAUHHI-.0099)) RETURN
02995*      77      IFLS=1
02996*      78      GO TO 10
02997*      79      50 AK=(ZCALC(111)-ZCALC(111-1))/COS(ALPHA)
02998*      80      AU=(ZCALC(111)-ZCALC(111-1))*TAN(THETA(111-1,15))
02999*      81      PK=AU*(RFI-RF)
03000*      82      QR=TAUHW-TAUZ(111,15)
03001*      83      UR=QR*AK/PK
03002*      84      AU=AK-UR
03003*      85      TA=AU*COS(ALPHA)
03004*      86      TS=(ZCALC(111)-ZCALC(111-1))-TA
03005*      87      DELZ=TS
03006*      88      AINCHI = ZCALC(111-1)+TA
03007*      89      NCX=NGEO(KRPH)-1
03008*      90      NCY=NGEO(KRPH+1)-1
03009*      91      ALLPX=ALPPL(NCX,KRPH)
03010*      92      ALLPY=ALPPL(NCY,KRPH+1)
03011*      93      ALPHI=ALLPX+(ALLPY-ALLPX)*(AINCHI-AINCX)/(AINCY-AINCX)

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03012	94	IIH=III-1
03013	95	WRITE(16,200)TIME,IS,III,ZCALC(III),IIH,ZCALC(IIH),AINCW,AINCHI
03014		•DELZ=ALP*ALPHI
03015	96	200 FORMAT(1X,'•PARTBN• TIME=',F6.2,1X,'IS=',11,1X,2('ZCALC(',13,')='
03016		•F7.2,1X), 'AINCW=',F7.2,1X, 'AINCHI=',F7.2,1X, 'DELZ=',F4.3,1X, 'ALP='
03017		•F6.2,1X, 'ALPHI=',F6.2)
03018	97	GO TO 100
03019	98	90 ALP=0.0
03020	99	ALPHI=0.0
03021	100	100 TAUHW=TSAYW
03022	101	TAUHHI=TSAVHI
03023	102	RPHI=RPHIS
03024	103	RF=RFS
03025	104	RETURN
03026	105	END

SUBROUTINE PARTN (IPRNF, IS)

SYMBOL	REFERENCES
1	30° 35
2	29 33°
3	30 36°
5	28 32 38°
7	39 49°
10	51 54° 78
30	47 76°
50	58 79°
90	42 98°
100	31 43 48 53 75 97 100°
200	74WK 95WK 96°
AB	62° 63
ABCYL	8CU
ABHD	4CU
ABN	4CU
AC	63° 64
ACCLL	8CU
AD	59° 63
AF	61° 63
AFX	7CU
AFY	7CU
AH	64° 66
AIRC	6CU
AIRCH1	8CU 27 72 74WK 88° 93 95WK
AIRCH5	2CU 27°
AIRCIN	3CU
AIRCN	13CU 26 65 66° 71 72 74WK 95WK
AIRCH5	2CU 26° 65°
AIRCA	10CU 55 56 56 57 57 71 71 93 95
AIRCY	10CU 55 56 57 71 93
AKKSI	13CU
ALLIA	69° 71 71 91° 93 93
ALLPY	76° 71 92° 93
ALP	14CU 56° 71° 74WK 95WK 98°
ALPHA	55° 59 64 79 85
ALPH1	7CU 52° 74WK 93° 95WK 99°
ALPPL	4CU 69 76 91 92
ALPA	11CU
ALPY	11CU
AMACH	8CU
AMPN	13CU
AMW	13CU
ARIBU	8CU
ARLUPS	8CU
ARD	6CU
ARU1	3CU
AO	86° 81
AP	12CU

[illegible]

C3027*	1	SUBROUTINE PRESET
C3028*	2	IMPLICIT REAL (A-H,O-Z,H)
C3029*	3	LOGICAL LIST1,STATIC,ERR
C3030*	4	COMMON/BLK001/ERR,IN
C3031*	5	COMMON/BLK005/NLEWIS,NSI,NF,NCASES,NCASE
C3032*	6	COMMON/BLK021/CSCOEFI3),LIST1,STATIC
C3033*	7	COMMON/BLK025/NTAPE,NPLOT,NCARD,NSTAPE,NSCARD
C3034*	8	LIST1=.TRUE.
C3035*	9	NCARD=0
C3036*	10	NCASES=1
C3037*	11	NF=1
C3038*	12	NLEWIS=0
C3039*	13	NPLOT=0
C3040*	14	NSI=1
C3041*	15	NTAPE=0
C3042*	16	NSTAPE=0
C3043*	17	NSCARD=0
C3044*	18	RETURN
C3045*	19	END

SYMBOL	REFERENCES
BLK001	4C0
BLK005	5C0
BLK021	6C0
BLK025	7C0
CSCOLF	6C0
ENR	3LG 4C0
IN	4C0
LIST1	3LG 6C0 8
NCARD	7C0 9
NCASE	5C0
NCASES	5C0 10
NF	5C0 11
NLLAIS	5C0 12
NPL01	7C0 13
NSCAN0	7C0 17
NSI	5C0 14
NSTAPE	7C0 16
NTAPE	7C0 15
PRESET	1EY
STATIC	3LG 6C0

030460	1	SUBROUTINE PRT1
030470	2	IMPLICIT REAL (A-H,O-Z,N)
030480	3	LOGICAL LIST1,STATIC
030490	4	LOGICAL ERR
030500	5	COMMON/BLK001/ERN,IN
030510	6	COMMON/BLK005/NLEWIS,NSI,NF,NCASES,NCASE
030520	7	COMMON/BLK009/HITOT,SII,DELT,MPR,RIZ
030530	8	COMMON/BLK021/CSCOEFL(3),LIST1,STATIC
030540	9	COMMON/BLK025/ HTAPL,HPLT,NCARD,INSTAPE,NSCARD
030550	10	COMMON/BLK030/ COLINT(5)
030560	11	NCOUT=NCASE+1
030570	12	WRITE(6,10) NCOUT
030580	13	10 FORMAT('1',I21,'THESE ARE THE INITIAL VALUES FOR CASE ',I3//)
030590	14	WRITE(6,15)
030600	15	15 FORMAT('1',I31,'PROGRAM CONSTANTS///',I3,'CURVE FIT CONSTANTS')
030610	16	DO 20 L=1,3
030620	17	20 WRITE(6,32) L,CSCOEFL(L)
030630	18	32 FORMAT(' CSCOEFL(',I1,')=',G15.8)
030640	19	WRITE(6,55)
030650	20	55 FORMAT('1',I31,'INERT MASS CURVE FIT COEFFICIENTS')
030660	21	DO 30 I=1,5
030670	22	30 WRITE(6,35) I,COLINT(I)
030680	23	35 FORMAT(' COLINT(',I1,')=',G15.8)
030690	24	WRITE(6,40)
030700	25	40 FORMAT('1',I31,'GENERAL PROGRAM INDICATORS')
030710	26	WRITE(6,63) LIST1
030720	27	63 FORMAT(' LIST1=',I10)
030730	28	WRITE(6,64) NCARD
030740	29	64 FORMAT(' NCARD =',I10)
030750	30	WRITE(6,65) NCASES
030760	31	65 FORMAT(' NCASES=',I10)
030770	32	WRITE(6,67) NF
030780	33	67 FORMAT(' NF =',I10)
030790	34	WRITE(6,68) NLEWIS
030800	35	68 FORMAT(' NLEWIS=',I10)
030810	36	WRITE(6,690) HPLT
030820	37	690 FORMAT(' HPLT =',I10)
030830	38	WRITE(6,692) NSI
030840	39	692 FORMAT(' NSI =',I10)
030850	40	WRITE(6,693) HTAPL
030860	41	693 FORMAT(' HTAPL =',I10)
030870	42	WRITE(6,694) INSTAPE
030880	43	694 FORMAT(' INSTAPE=',I10)
030890	44	WRITE(6,6942) NSCARD
030900	45	6942 FORMAT(' NSCARD=',I10)
030910	46	WRITE(6,70) SII
030920	47	70 FORMAT('1',I31,'INERT MASS ISP(SII)=',G15.8)
030930	48	WRITE(6,72) HITOT
030940	49	72 FORMAT('1',I31,'TOTAL INERT MASS(HITOT)=',G15.8)
030950	50	100 RETURN

I N D E X

SUBROUTINE PRT1

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030960

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END

SYMBOL

REFERENCES

10	-	12HR	13°
15	-	14HR	15°
20	-	16	17°
30	-	21	22°
32	-	17HR	18°
35	-	22HR	23°
40	-	24HR	25°
55	-	19HR	20°
63	-	26HR	27°
64	-	28HR	29°
65	-	33HR	31°
67	-	32HR	33°
68	-	34HR	35°
70	-	46HR	47°
72	-	48HR	49°
100	-	50°	
690	-	36HR	37°
692	-	38HR	39°
693	-	40HR	41°
6941	-	42HR	43°
6942	-	44HR	45°
BLK001	-	50°	
BLK005	-	60°	
BLK009	-	70°	
BLK021	-	80°	
BLK025	-	90°	
BLK030	-	100°	
CUEINT	-	100°	22HR
CSCOLF	-	80°	17HR
DELT	-	70°	
ERM	-	4LG	50°
I	-	21	22HR 22HR
IN	-	50°	
L	-	16	17HR 17HR
LIST1	-	3LG	80° 26HR
MIT01	-	70°	48HR
H12	-	70°	
HPR	-	70°	
NCARD	-	90°	28HR
NCASE	-	60°	11
NCASES	-	60°	30HR
NCOUT	-	11°	12HR
NP	-	60°	32HR
NLEWIS	-	60°	34HR
NPL01	-	90°	36HR
NSCARD	-	90°	44HR
NSI	-	60°	38HR
NSIAPC	-	90°	42HR

I N D E X

SUBROUTINE PRT1

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NTAPE	=	9C0	40WR
PRT1	=	1EY	
SII	=	7C0	46WR
STATIC	=	3LG	8C0

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G3097*	1	SUBROUTINE PR17
G3098*	2	IMPLICIT REAL (A-H,O-Z,H)
G3099*	3	DIMENSION A(10)
G3100*	4	DATA A/9.00665,0.45359237,0.3046,4.4402216,689475.729,0.0254,
G3101*		1 0.00004516, 0.55555556, 1.6367064E-05, 0.0/
G3102*	5	COMMON/BLK005/NLEK15,NS1,NF,NCASES,NCASE
G3103*	6	COMMON/BLK009/MTOT,SII,DELT,NPR,MIZ
G3104*	7	COMMON/BLK016/ HFINIT,FI,MII,NIFZ,MIR,F17,AITIN,AITVIN
G3105*	8	COMMON/BLK025/ NTAPL,NPLOT,NCARD,NSTAPL,NSCARD
G3106*	9	COMMON/BLK031/ PKIC,PTIME,PK155,PK110,PT15P,PT15T
G3107*	10	COMMON/BLK032/ PTIMSV,DELTSV,KPRHI
G3108*	11	COMMON/CONST5/GNUT,PI,RADIAN
G3109*	12	COMMON/INPUT6/CSTAR,CAMA,R,HCSTR,PR155(20),CSTR(20),GAMAG(20),
G3110*		1 ANPG(20),TCOMB(20),NCSCOE
G3111*	13	COMMON/INPUT1/AN2,CH,DE,DT,ANN
G3112*	14	COMMON/INPUT0/DELF,PA,PHI,HCO,DELZ,KDCHP(72)
G3113*	15	COMMON/COMA/DELT,APHI,WDOT1,ANIBU,TIMEX,UT,ANLOPS,ACCEL,
G3114*		1 ABCYL,PRNT(101,15),A1NCHI,AMACH,ZCALC(101)
G3115*	16	COMMON/CONB/ANH,AJPHED,AJBHLD,AJPHOZ,AJBNOZ,XUH,XBN,DTINT
G3116*	17	COMMON/CONG/TAUZ(101,8),HBZ(101,8),PD(101),TAUWDP(101,8),RB,VF,
G3117*		1 D&DOT,YF
G3118*	18	COMMON/COM1/AITVAC,FVAC,VFCYL
G3119*	19	COMMON/COMT/TAU,XDARIN,AFB,AJPP
G3120*	20	COMMON/COMW/AEE,PEPUI
G3121*	21	COMMON/PARND/AP,PHI1,PHAX,WDOT,111,11J,WDOTD,NSLOT,NTABE,TQFLAG,
G3122*		1 BKNDUT,115,151,152,NT,SCUR(18,2)
G3123*	22	COMMON/PARND/AJBH
G3124*	23	COMMON/PARMF/PH,TIME,A1NCW,T,P,DELTA,U,PUR,DIS,AMPN,AT,AMW,AKRST
G3125*	24	COMMON/PARMG/VFH,AAH,VFH,VIS,AIT,SPHDT,SPONDT,VFINT,AUTOT
G3126*	25	COMMON/PARN1/AOMCYL,A1BCYL,A1PCYL,VPH,VPN
G3127*	26	COMMON/PARNK/F,EPI,PEPO,CFOL,VFWEB,WD,DEED,CLOPS,CFO,WGTOT,
G3128*		1 SWDOTN
G3129*	27	COMMON/PARNV/RF
G3130*	28	COMMON/PARMA/WF1,EPG
G3131*	29	COMMON/PARNZ/ABSLOT,PO
G3132*	30	COMMON/PARNAB/NSUBMG,NSUBMG,NEND
G3133*	31	COMMON/PARNK/PIAT,AENT,U1A,PIA,PIB,AZA,VGA,PHA,PHAZ,TMA,VGAZ,
G3134*		5 MDDETA,UIR,A1A,MD1B
G3135*	32	DATA HNGKOS,HMCASE,HNOZ,HIGN,MTVC,TGRAIN,AHALFC/7*0.0/
G3136*	33	FVAC=FVAC+FI
G3137*	34	WDT=WDT*HIF
G3138*	35	TISP=ITVAC-ZERODV(WDT)
G3139*	36	IF(TIME.LT,PTIME) GO TO 791
G3140*	37	WRITE(6,10) TIME
G3141*	38	10 FORMAT('IGNITION TIME, TIME (S):',I0X,G15.8/,'T50,PROGRAM',T9,
G3142*		1 'PARAMETER DESCRIPTION (UNITS)',T4B,'NOMENCLATURE',T66,'INTERNATIO
G3143*		2NAL',T89,'ENGLISH',T2,'MOTOR PARAMETERS:')
G3144*	39	FIDEL=F+FI
G3145*	40	TERM = FIDEL * A(4)
G3146*	41	WRITE(6,20) TERM,FIDEL

03147.	42	20 FORMAT(14,'TOTAL DELIVERED THRUST (N,LBF)',T51,'FTDEL',
03148.		\$ 166,G15.8,T86,G15.8)
03149.	43	TERM = FTVAC * A(4)
03150.	44	WRITE(6,25) TERM,FTVAC
03151.	45	25 FORMAT(14,'TOTAL VACUUM THRUST (N,LBF)',T51,'FTVAC',
03152.		\$ 166,G15.8,T86,G15.8)
03153.	46	TERM = F1 * A(4)
03154.	47	WRITE(6,30) TERM,F1
03155.	48	30 FORMAT(14,'THRUST CONTRIBUTION OF INERTS (N,LBF)',T51,'F1',
03156.		\$ 166,G15.8,T86,G15.8)
03157.	49	SRMDT1=AIT+AITIN
03158.	50	TERM = SRMDT1 * A(4)
03159.	51	WRITE(6,35) TERM,SRMDT1
03160.	52	35 FORMAT(14,'DELIVERED TOTAL IMPULSE (N*S,LBF*S)',T51,'SRMDT1',
03161.		\$ 166,G15.8,T86,G15.8)
03162.	53	WRITE(6,35) TISP,TISP
03163.	54	351 FORMAT(14,'TOTAL VACUUM SPECIFIC IMPULSE (S,S1)',T51,'TISP',
03164.		\$ 166,G15.8,T86,G15.8)
03165.	55	SRMVT1=AITVAC + AITVIN
03166.	56	TERM = SRMVT1 * A(4)
03167.	57	WRITE(6,40) TERM,SRMVT1
03168.	58	40 FORMAT(14,'VACUUM TOTAL IMPULSE (N*S,LBF*S)',T51,'SRMVT1',
03169.		\$ 166,G15.8,T86,G15.8)
03170.	59	CF = FTVAC/(A1*PON)
03171.	60	WRITE(6,45) CF,CF
03172.	61	45 FORMAT(14,'THRUST COEFFICIENT',T51,'CF',
03173.		\$ 166,G15.8,T86,G15.8)
03174.	62	TERM = WDOT * A(2)
03175.	63	WRITE(6,50) TERM,WDOT
03176.	64	50 FORMAT(14,'GRAIN DISCHARGE MASS FLOWRATE (KG/S,LBM/S)',T51,'WDOT',
03177.		\$ 166,G15.8,T86,G15.8)
03178.	65	TERM = SWDOTN * A(2)
03179.	66	WRITE(6,55) TERM,SWDOTN
03180.	67	55 FORMAT(14,'FLOWRATE INTEGRAL (KG,LBM)',T51,'SWDOTN',
03181.		\$ 166,G15.8,T86,G15.8)
03182.	68	TERM = MIF * A(2)
03183.	69	WRITE(6,60) TERM,MIF
03184.	70	60 FORMAT(14,'INERT MASS FLOWRATE (KG/S,LBM/S)',T51,'MIF',
03185.		\$ 166,G15.8,T86,G15.8)
03186.	71	TERM=MIF * A(2)
03187.	72	WRITE(6,65) TERM,MIF
03188.	73	63 FORMAT(14,'INERT MASS REMAINING (KG,LBM)',T51,'MIF',
03189.		\$ 166,G15.8,T86,G15.8)
03190.	74	TERM = ABTOT * A(2)
03191.	75	WRITE(6,65) TERM,ABTOT
03192.	76	65 FORMAT(14,'TOTAL BURN AREA (M**2,IN**2)',T51,'ABTOT',
03193.		\$ 166,G15.8,T86,G15.8)
03194.	77	TERM = VF * A(9)
03195.	78	WRITE(6,70) TERM,VF
03196.	79	70 FORMAT(14,'TOTAL PROPELLANT VOLUME (M**3,IN**3)',T51,'VF',

03197*		\$ T00,G15.0,T00,G15.0)
03198*	80	TERM = WF * A(2)
03199*	81	WRITE(6,75) TERM,WF
03200*	82	75 FORMAT(14,'PROPELLANT MASS REMAINING (KG,LBM)',T51,'WF',
03201*		\$ T00,G15.0,T00,G15.0)
03202*	83	TERM = WGTOT * A(2)
03203*	84	WRITE(6,80) TERM,WGTOT
03204*	85	80 FORMAT(14,'TOTAL GAS MASS (KG,LBM)',T51,'WGTOT',
03205*		\$ T00,G15.0,T00,G15.0)
03206*	86	WRITE(6,85) GAMA,GAMA
03207*	87	85 FORMAT(14,'RATIO OF SPECIFIC HEATS',T51,'GAMA',
03208*		\$ T00,G15.0,T00,G15.0)
03209*	88	TERM = AMH * A(2)
03210*	89	WRITE(6,90) TERM,AMH
03211*	90	90 FORMAT(14,'MOLECULAR WEIGHT OF GAS (KG/MOLE,LBM/MOLE)',T51,'AMH',
03212*		\$ T00,G15.0,T00,G15.0)
03213*	91	TERM = CSTAK * A(3)
03214*	92	WRITE(6,95) TERM,CSTAK
03215*	93	95 FORMAT(14,'CHARACTERISTIC EXHAUST VELOCITY (M/S,FT/S)',T51,'CSTAK',
03216*		\$ T00,G15.0,T00,G15.0)
03217*	94	WRITE(6,100) AMPN,AMPN
03218*	95	100 FORMAT(14,'MAXIMUM CHAMBER MACH NUMBER',T51,'AMPN',
03219*		\$ T00,G15.0,T00,G15.0)
03220*	96	WRITE(6,200)
03221*	97	200 FORMAT(12,'HEAD END PARAMETERS:')
03222*	98	TERM = PH * A(5)
03223*	99	WRITE(6,205) TERM,PH
03224*	100	205 FORMAT(14,'TOTAL PRESSURE (N/M**2,LBF/IN**2)',T51,'PH',
03225*		\$ T00,G15.0,T00,G15.0)
03226*	101	TERM = SPHDT * A(5)
03227*	102	WRITE(6,210) TERM,SPHDT
03228*	103	210 FORMAT(14,'PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)',T51,'SPHDT',
03229*		\$ T00,G15.0,T00,G15.0)
03230*	104	TERM = AMH * A(7)
03231*	105	WRITE(6,215) TERM,AMH
03232*	106	215 FORMAT(14,'BURN AREA (M**2,IN**2)',T51,'AMH',
03233*		\$ T00,G15.0,T00,G15.0)
03234*	107	TERM=RBZ(1,1)
03235*	108	TERM=TERM*A(6)
03236*	109	WRITE(6,220) TERM,TERM
03237*	110	220 FORMAT(14,'BURN RATE (M/S,IN/S)',T51,'RBZ(1)',
03238*		\$ T00,G15.0,T00,G15.0)
03239*	111	TERM=TAUZ(1,1)
03240*	112	TERM=TERM*A(6)
03241*	113	WRITE(6,225) TERM,TERM
03242*	114	225 FORMAT(14,'DISTANCE BURNED (M,IN)',T51,'TAUZ(1)',
03243*		\$ T00,G15.0,T00,G15.0)
03244*	115	TERM = VFH * A(9)
03245*	116	WRITE(6,230) TERM,VFH
03246*	117	230 FORMAT(14,'PROPELLANT VOLUME (M**3,IN**3)',T51,'VFH',

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G3247*      S T66,G15.8,T86,G15.8)
G3248*      118      TERM = VPH * A(9)
G3249*      119      WRITE(6,235) TERM,VPH
G3250*      120      235 FORMAT(14,'GAS VOLUME (M**3,IN**3)',T51,'VPH',
G3251*      S T66,G15.8,T86,G15.8)
G3252*      121      TERM = PRNT(1,3) * A(8)
G3253*      122      WRITE(6,240) TERM,PRNT(1,3)
G3254*      123      240 FORMAT(14,'GAS STATIC TEMPERATURE (DEG K,DEG M)',T51,'PRNT(1,3)',
G3255*      S T66,G15.8,T86,G15.8)
G3256*      124      WRITE(6,245)
G3257*      125      245 FORMAT(12,'CYLINDRICAL SECTION PARAMETERS:')
G3258*      126      TERM = ABCYL * A(7)
G3259*      127      WRITE(6,250) TERM,ABCYL
G3260*      128      250 FORMAT(14,'RADIAL BURN AREA (M**2,IN**2)',T51,'ABCYL',
G3261*      S T66,G15.8,T86,G15.8)
G3262*      129      TERM = ABSLOT * A(7)
G3263*      130      WRITE(6,255) TERM,ABSLOT
G3264*      131      255 FORMAT(14,'SEGMENT FACE BURN AREA (M**2,IN**2)',T51,'ABSLOT',
G3265*      S T66,G15.8,T86,G15.8)
G3266*      132      TERM = VFCYL * A(9)
G3267*      133      WRITE(6,260) TERM,VFCYL
G3268*      134      260 FORMAT(14,'PROPELLANT VOLUME (M**3,IN**3)',T51,'VFCYL',
G3269*      S T66,G15.8,T86,G15.8)
G3270*      135      TERM = VP * A(9)
G3271*      136      WRITE(6,265) TERM,VP
G3272*      137      265 FORMAT(14,'GAS VOLUME (M**3,IN**3)',T51,'VP',
G3273*      S T66,G15.8,T86,G15.8)
G3274*      138      WRITE(6,300)
G3275*      139      300 FORMAT(12,'AFT END PARAMETERS:')
G3276*      140      TERM = PON * A(5)
G3277*      141      WRITE(6,305) TERM,PON
G3278*      142      305 FORMAT(14,'TOTAL PRESSURE NOZ ENT (N/M**2,LBF/IN**2)',T51,'PON',
G3279*      S T66,G15.8,T86,G15.8)
G3280*      143      TERM = SPONDY * A(5)
G3281*      144      WRITE(6,310) TERM,SPONDY
G3282*      145      310 FORMAT(14,'PRESSURE INTEGRAL (N*S/M**2,LBF*S/IN**2)',T51,'SPONDY',
G3283*      S T66,G15.8,T86,G15.8)
G3284*      146      TERM = AAN * A(7)
G3285*      147      WRITE(6,315) TERM,AAN
G3286*      148      315 FORMAT(14,'BURN AREA (M**2,IN**2)',T51,'AAN',
G3287*      S T66,G15.8,T86,G15.8)
G3288*      149      TERM=RBZ(NI+1,1)
G3289*      150      TERM=TERM*A(6)
G3290*      151      IF(NSUBMG,LE.0) GO TO 319
G3291*      152      WRITE(6,110) TERM,TERM
G3292*      153      110 FORMAT(14,'BURN RATE, REGION A (M/S,IN/SEC)',T51,'RBZ(NI+1,1)',
G3293*      S T66,G15.8,T86,G15.8)
G3294*      154      TERM=RBZ(NI+2,1)
G3295*      155      TERM=TERM*A(6)
G3296*      156      WRITE(6,120) TERM,TERM

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OF POOR QUALITY

G3297*	157	120 FORMAT(14,'BURN RATE, REGION B (M/S,IN/SEC)',T51,'RBZ(NI+2,1)',
G3298*		ST66,G15.8,T86,G15.8)
G3299*	158	TERM=TAUZ(NI+1,1)
G3300*	159	TERM=TERM*A(6)
G3301*	160	WRITE(6,130) TERM,TERM
G3302*	161	130 FORMAT(14,'DISTANCE BURNED, REGION A (M,IN)',T51,'TAUZ(NI+1,1)',
G3303*		ST66,G15.8,T86,G15.8)
G3304*	162	TERM=TAUZ(NI+2,1)
G3305*	163	TERM=TERM*A(6)
G3306*	164	WRITE(6,140) TERM,TERM
G3307*	165	140 FORMAT(14,'DISTANCE BURNED, REGION B (M,IN)',T51,'TAUZ(NI+2,1)',
G3308*		ST66,G15.8,T86,G15.8)
G3309*	166	GO TO 326
G3310*	167	319 WRITE(6,320) TERM,TERM
G3311*	168	320 FORMAT(14,'BURN RATE (M/S,IN/SEC)',T51,'NOZ(NI+1,1)',
G3312*		S 166,G15.8,T86,G15.8)
G3313*	169	TERM=TAUZ(NI+1,1)
G3314*	170	TERM=TERM*A(6)
G3315*	171	WRITE(6,325) TERM,TERM
G3316*	172	325 FORMAT(14,'DISTANCE BURNED (M,IN)',T51,'TAUZ(NI+1,1)',
G3317*		S 166,G15.8,T86,G15.8)
G3318*	173	326 TERM = VFN * A(9)
G3319*	174	WRITE(6,330) TERM,VFN
G3320*	175	330 FORMAT(14,'PROPELLANT VOLUME (M**3,IN**3)',T51,'VFN',
G3321*		S 166,G15.8,T86,G15.8)
G3322*	176	TERM = VFN * A(9)
G3323*	177	WRITE(6,335) TERM,VFN
G3324*	178	335 FORMAT(14,'GAS VOLUME (M**3,IN**3)',T51,'VFN',
G3325*		S 166,G15.8,T86,G15.8)
G3326*	179	IF (H.SUBNG.LL.0) GO TO 336
G3327*	180	TERM = PRNT(NI+2,3) * A(8)
G3328*	181	WRITE(6,3400) TERM,PRNT(NI+2,3)
G3329*	182	3400 FORMAT(14,'GAS STATIC TEMP, NOZ ENT (DEG K,DEG R)',T51,'PRNT(NI+2,
G3330*		S3)',166,G15.8,T86,G15.8)
G3331*	183	TERM = A2A * A(7)
G3332*	184	WRITE(6,3410) TERM, A2A
G3333*	185	3410 FORMAT(14,'PORT AREA, NOZ ENT (M**2,IN**2)',T51,'A2A',
G3334*		ST66,G15.8,T86,G15.8)
G3335*	186	GO TO 346
G3336*	187	336 TERM = PRNT(NI,3) * A(8)
G3337*	188	WRITE(6,340) TERM,PRNT(NI,3)
G3338*	189	340 FORMAT(14,'GAS STATIC TEMPERATURE (DEG K,DEG R)',T51,'PRNT(NI,3)',
G3339*		S 166,G15.8,T86,G15.8)
G3340*	190	TERM = AP * A(7)
G3341*	191	WRITE(6,345) TERM,AP
G3342*	192	345 FORMAT(14,'PORT AREA (M**2,IN**2)',T51,'AP',
G3343*		S 166,G15.8,T86,G15.8)
G3344*	193	346 WRITE(6,350)
G3345*	194	350 FORMAT(12,'NOZZLE PARAMETERS:')
G3346*	195	TERM = AT * A(7)


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03347*      196      WRITE(6,355) TLKM,AT
03348*      197      355 FORMAT(14,'THROAT AREA (M**2,IN**2)',T51,'AT',
03349*      198      $ 166,G15.8,T86,G15.8)
03350*      198      AE = PI*DE**2/4.
03351*      199      EPR=AE/AT
03352*      200      WRITE(6,360) EPR,EPR
03353*      201      360 FORMAT(14,'EXPANSION RATIO',T51,'EPR',
03354*      202      $ 166,G15.8,T86,G15.8)
03355*      202      WRITE(6,365) PEPO,PEPO
03356*      203      365 FORMAT(14,'PRESSURE RATIO',T51,'PEPO',
03357*      204      $ 166,G15.8,T86,G15.8)
03358*      204      WRITE(6,370)
03359*      205      370 FORMAT(12,'MISCELLANEOUS PARAMETERS:')
03360*      206      WRITE(6,375) AKRST,AKRST
03361*      207      375 FORMAT(14,'ANISOTROPIC BURN RATE COEFFICIENT',T51,'AKRST',
03362*      208      $ 166,G15.8,T86,G15.8)
03363*      208      WRITE(6,380) ANLOPS,ANLOPS
03364*      209      380 FORMAT(14,'NUMBER OF PRESSURE ITERATIONS',T51,'ANLOPS',
03365*      210      $ 166,G15.8,T86,G15.8)
03366*      210      791 IF (KPRINT.EQ.2) RETURN
03367*      211      WRD4 = FVAL*ZERODV(WDOT)
03368*      212      WRD13= WF1-WF
03369*      213      IF (NSTAPE.EQ.0) GO TO 792
03370*      214      WRITE(12) TIME,FTVAC,AITVAC,WRD4,CSTAR,CFOL,PH,PON,PRNT(1,3),AT,
03371*      215      $ANPH,WDOT,WRD13,WF,MIR,AEE,EPG,XBARIH,AJBB,AJPP,TISP
03372*      215      792 IF (INPLUT.EQ.0) GO TO 793
03373*      216      WRITE(13) TIME,FTVAC,AITVAC,WRD4,CSTAR,CFOL,PH,PON,PRNT(1,3),AT,
03374*      217      $ANPH,WDOT,WRD13,WF,MIR,AEE,EPG,XBARIH,AJBB,AJPP,TISP
03375*      217      793 IF (INCARD.EQ.0) GO TO 795
03376*      218      WRITE(7,794) TIME,WF,MIR,XBARIH,AJBB,AJPP
03377*      219      794 FORMAT(F0.3,2F12.2,3E15.8)
03378*      220      795 IF (NSTAPE.EQ.0) GO TO 796
03379*      221      WRITE(14) TIME,FTVAC,TISP,CEUL,AT,AEE,PON,MIF,XBARIH
03380*      222      796 IF (INSCARD.EQ.0) GO TO 1000
03381*      223      WRITE(7,797) TIME,FTVAC,TISP,PH
03382*      224      797 FORMAT(F6.2,3(15X,E15.8))
03383*      225      1000 RETURN
03384*      226      ENTRY OUTTAP
03385*      227      END FILE 12
03386*      228      NPIT = WF1
03387*      229      WRITE(12) NPIT,MPIT,MMGRUS,MHCASE,MNOZ,MIGN,NTVC,TGRAIN,DELF,
03388*      230      $ AN2,ANALFC
03389*      231      END FILE 12
03390*      231      RETURN
03391*      232      END

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I N D E X

SUBROUTINE PRT7

SYMBOL

REFERENCES

10	-	37WK	38
20	-	41WK	42
25	-	44WK	45
30	-	47WK	48
35	-	51WK	52
40	-	57WK	58
45	-	60WK	61
50	-	63WK	64
55	-	66WK	67
60	-	69WK	70
63	-	72WK	73
65	-	75WK	76
70	-	78WK	79
75	-	81WK	82
80	-	84WK	85
85	-	86WK	87
90	-	89WK	90
95	-	92WK	93
100	-	94WK	95
110	-	152WK	153
120	-	156WK	157
130	-	160WK	161
140	-	164WK	165
200	-	96WK	97
205	-	99WK	100
210	-	102WK	103
215	-	105WK	106
220	-	109WK	110
225	-	113WK	114
230	-	116WK	117
235	-	119WK	120
240	-	122WK	123
245	-	124WK	125
250	-	127WK	128
255	-	130WK	131
260	-	133WK	134
265	-	136WK	137
300	-	138WK	139
305	-	141WK	142
310	-	144WK	145
315	-	147WK	148
319	-	151	167
320	-	167WK	168
325	-	171WK	172
326	-	166	173
330	-	174WK	175
335	-	177WK	178
336	-	179	187

346	-	188WK	189°
345	-	191WK	192°
346	-	186	193°
350	-	193WK	194°
351	-	53WK	54°
355	-	196WK	197°
360	-	200WK	201°
365	-	202WK	203°
370	-	204WK	205°
375	-	206WK	207°
380	-	208WK	209°
791	-	36	210°
792	-	213	215°
793	-	215	217°
794	-	218WK	219°
795	-	217	220°
796	-	220	222°
797	-	223WK	224°
1000	-	222	225°
3400	-	181WK	182°
3410	-	184WK	185°
A	-	30J	40A 40 43 46 50 56 62 65 68
		71	74 77 80 83 88 91 90 101 104
		108	112 115 118 121 126 129 132 135 140
		143	146 150 155 159 163 170 173 176 180
		183	187 190 195
AIA	-	31CO	
AZA	-	31CO	183 184WK
AAN	-	24CO	146 147WK
ABCYL	-	15CO	126 127WK
ABSLOT	-	29CO	129 130WK
ABTOT	-	24CO	74 75WK
ACCLL	-	15CO	
AL	-	19H-	199
AEE	-	26CO	214WK 216WK 221WK
ALNT	-	31CO	
AFF	-	19CO	
AAALFC	-	32DA	229WK
ANH	-	16CO	104 105WK
AIBCYL	-	25CO	
AIRCH	-	15CO	
AIRCW	-	23CO	
AIPCYL	-	25CO	
AIT	-	24CO	49
AITIH	-	7CO	49
AITVAC	-	18CO	55 214WK 216WK
AITVIH	-	7CO	55
AJBH	-	22CO	214WK 216WK 218WK
AJBHEB	-	16CO	
AJBNOZ	-	16CO	

I N D E X

SUBROUTINE PR7

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AJPHED	-	16CO							
AJPHO2	-	16CO							
AJPP	-	19CO	214WR	216WR	218WR				
AKRST	-	23CO	206WR	206WR					
AMACH	-	15CO							
AMPN	-	23CO	94WR	94WR	214WR	216WR			
APM	-	23CO	80	84WR					
ARWG	-	12CO							
ARZ	-	13CO	229WR						
ARIBO	-	15CO							
ARLUPS	-	15CO	208WR	208WR					
ARN	-	13CO							
ARUCYL	-	25CO							
AP	-	21CO	190	191WR					
APH1	-	15CO							
AT	-	23CO	59	195	196WR	199	214WR	216WR	221WR
BLK005	-	5CO							
BLK009	-	6CO							
BLK016	-	7CO							
BLK025	-	8CO							
BLK031	-	9CO							
BLK032	-	10CO							
BKROUT	-	21CO							
CF	-	59W	60WR	60WR					
CFO	-	26CO							
CFOL	-	26CO	214WR	216WR	221WR				
CLOPS	-	26CO							
CM	-	13CO							
COMA	-	15CO							
COMB	-	16CO							
COMG	-	17CO							
COMI	-	18CO							
COMT	-	19CO							
CONA	-	20CO							
CONSID	-	11CO							
CSTAN	-	12CO	91	92WR	214WR	216WR			
CSTR	-	12CO							
DL	-	13CO	198						
DEED	-	26CO							
DELF	-	14CO	229WR						
DELT	-	6CO							
DELTA	-	23CO							
DELTSV	-	10CO							
DELTT	-	15CO							
DELZ	-	14CO							
DIS	-	23CO							
DI	-	13CO							
DTINT	-	16CO							
DRDUT	-	17CO							
EPI	-	26CO							

SUBROUTINE FRT/

[illegible]

I N D E X

SUBROUTINE PRT7

NSLOT	-	21CO							
NSTAPE	-	8CO	220						
NSUBMG	-	30CO	151	179					
NTABL	-	21CO							
NTAPE	-	8CO	213						
OUTTAP	-	226LY							
P	-	23CO							
PIA	-	31CO							
PIAT	-	31CO							
PIB	-	31CO							
PA	-	14CO							
PAHHAD	-	30CO							
PAHHAK	-	31CO							
PAHMB	-	21CO							
PAHMD	-	22CO							
PAHMF	-	23CO							
PAHMG	-	24CO							
PAHMI	-	25CO							
PAHMK	-	26CO							
PAHMY	-	27CO							
PAHMA	-	28CO							
PAHMY	-	29CO							
PU	-	17CO							
PEPU	-	26CO	202AR	202AR					
PEPUL	-	26CO							
PH	-	23CO	98	99AR	214AR	216AR	223AR		
PHI	-	14CO							
PI	-	11CO	198						
PHA	-	31CO							
PHAX	-	21CO							
PHAZ	-	31CO							
PHIN	-	21CO							
PU	-	29CO							
PON	-	23CO	59	140	141AR	214AR	216AR	221AR	
PRESS	-	12CO							
PRIC	-	9CO							
PRNT	-	15CO	121	122AR	180	181AR	187	188AR	214AR 216AR
PRT7	-	1EY							
PRTISP	-	9CO							
PRTISS	-	9CO							
PRTIST	-	9CO							
PRTITO	-	9CO							
PTIME	-	9CO	36						
PTIMSV	-	10CO							
R	-	12CO							
RAUJAH	-	11CO							
RU	-	17CO							
RUZ	-	17CO	107	149	154				
SCUR	-	21CO							
SII	-	6CO							

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SPHOT	-	24CO	101	102WK							
SPHNDT	-	24CO	143	144WK							
SRHMTI	-	49#	50	51WK							
SRHVTI	-	55#	56	57WK							
SADULT	-	26CO	65	66WK							
I	-	23CO									
IAU	-	19CO									
IAUADP	-	17CO									
IAUZ	-	17CO	111	158	162	169					
TCOMB	-	12CO									
TEKN	-	4#	41WK	43#	44WK	46#	47WK	50#	51WK	56#	57WK
		62#	63WK	65#	66WK	68#	69WK	71#	72WK	74#	75WK
		77#	78WK	80#	81WK	83#	84WK	86#	87WK	89#	90WK
		98#	99WK	101#	102WK	104#	105WK	108#	109WK	112#	113WK
		115#	116WK	118#	119WK	121#	122WK	126#	127WK	129#	130WK
		132#	133WK	135#	136WK	140#	141WK	143#	144WK	146#	147WK
		153#	152WK	155#	156WK	159#	160WK	163#	164WK	167#	170#
		171WK	173#	174WK	176#	177WK	180#	181WK	183#	184WK	187#
		188WK	190#	191WK	195#	196WK					
TEKN	-	107#	108	109WK	111#	112	113WK	149#	150	152WK	154#
		165	166WK	168#	169	160WK	162#	163	164WK	167WK	169#
		173	171WK								
TGRAIN	-	320A	229WK								
TIME	-	23CO	36	37WK	214WK	216WK	218WK	221WK	223WK		
TIME#	-	15CO									
TISP	-	35#	53WK	53WK	214WK	216WK	221WK	223WK			
THA	-	31CO									
TOFLAG	-	21CO									
U	-	23CO									
UIA	-	31CO									
UIB	-	31CO									
UT	-	15CO									
VF	-	17CO	77	78WK							
VFCYL	-	18CO	132	133WK							
VFH	-	24CO	115	116WK							
VFINI	-	24CO									
VFN	-	24CO	173	174WK							
VFNLU	-	26CO									
VGA	-	31CO									
VGAZ	-	31CO									
VIS	-	24CO									
VP	-	17CO	135	136WK							
YPH	-	25CO	118	119WK							
VPN	-	25CO	176	177WK							
#D	-	26CO									
#JOT	-	21CO	34	62	63WK	211	214WK	216WK			
#JOTD	-	21CO									
#OOTI	-	15CO									
#DT	-	34#	35								
#F	-	27CO	80	81WK	212	214WK	216WK	218WK			

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NRV11	-	212=	214WH	216WH		
NRD4	-	211=	214WH	216WH		
AUARIH	-	19CU	214WH	216WH	218WH	221WH
ADH	-	16CU				
ADN	-	16CU				
ZCALC	-	15CU				
ZLNDDV	-	35	211			

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03392.	1	SUBROUTINE RBTSD	38580
03393.		CC	38750
03394.	C	SUBROUTINE RBTSD DETERMINES THE INITIAL ESTIMATE OF THE BURN RATE	38770
03395.	C	COEFFICIENT, AKRST, FOR EACH TIME INCREMENT DURING THE START	38780
03396.	C	TRANSIENT INTERVAL AND PERFORMS THE TABLE LOOK-UPS FOR PH AND	38790
03397.	C	AKRST (SECTION 4.3.3).	38800
03398.		CC	38820
03399.	2	LOGICAL LIST, STATIC	
03400.	3	COMMON/BLK21/CSCDEF(3), LIST, STATIC	
03401.	4	COMMON/BLK23/ DATA(10), H, RDS, NUNIT	
03402.	5	COMMON/CONST5/GH01, P1, RADIAR	
03403.	6	COMMON/INPUTD/AKRH, AKRN	
03404.	7	COMMON/INPUTE/AKG(5), AKH(5), AKH(39), AKSLOT(2), NAKR, TIMAKH(25),	
03405.		TBLAKH(25), NAKEND, TAB(25,8), TABD(25,8), NTAB(8)	
03406.	8	COMMON/INPUTF/NPH, PHST(70), TIMEPH(70), PCTAU	
03407.	9	COMMON/INPUTG/CSTAR, GAMA, R, NCSTR, PRESS(20), CSTR(20), GAMAG(20),	
03408.		AMWG(20), TCOHB(20), NCSCOE	
03409.	10	COMMON/INPUTH/STFLAG, STDYST, DELT51, DELT55, DELTTO	
03410.	11	COMMON/INPUTI/DELT, PA, PHI, HLO, DEL2, KDUMP(72)	
03411.	12	COMMON/WORKH/RH(5), RH2, ACQ, HHW, VFH0, VCH, ANK(10)	
03412.	13	COMMON/WORKH/KP(10), VFH0, VCN, ACK(10)	
03413.	14	COMMON/DUHYL/TIMCK2	
03414.	15	COMMON/COHA/DELT, APH, WDDT, AHIDU, TIMEH, UT, ANLOPS, ACCEL,	
03415.		ABCYL, PRHT(101,15), AINCH, AMACH, ZCALC(101)	
03416.	16	COMMON/COHG/TAUZ(101,8), RBZ(101,8), PD(101), TAUWDP(101,8), RB, VF,	
03417.		DWDUT, VP	
03418.	17	COMMON/CONST/TPK, AKRADJ, IEND	
03419.	18	COMMON/PARHE/PH, TIME, AINCW, I, P, DELTA, U, PON, DIS, AMPN, AT, AMW, AKRST	
03420.	19	COMMON/PARHG/VFH, AAH, VFH, VIS, AIT, SPHDT, SPONDT, VFINT, ABTOT	
03421.	20	COMMON/PARHAA/TO, IFLAG	
03422.	21	IF (TIME.EQ.0.0) TIMCK2=0.0	
03423.	22	IF (TIMCK2.GT.TIME) TIMCK2=TIME	
03424.	23	IF (NPH) 210, 210, 10	
03425.	24	10 IF (TIME-TIMEPH(NPH)) 20, 20, 210	
03426.	25	20 IF (TIMCK2-TIME) 30, 300, 300	
03427.	26	30 CALL XLIN(TIMEPH, PHST, NPH, TIME, PH, 13)	
03428.	27	80 IF (STDYST-1.0190, 210, 210	
03429.	28	90 CONTINUE	
03430.	29	100 DO 110 I=1, NPH	
03431.	30	IF (TIMEPH(I)-TIME) 110, 120, 120	
03432.	31	110 CONTINUE	
03433.	32	120 I=I-1	
03434.	33	DPHDT = (PH-PHST(1))/(TIME-TIMEPH(1))	
03435.	34	140 VOLUME= VP+VCH-VFH+VCN-VFN	
03436.	35	IF (NCSTR) 160, 160, 150	
03437.	36	150 CALL XLIN(PRESS, CSTR, NCSTR, PON, CSTR, 14)	
03438.	37	CALL XLIN(PRESS, TCOHB, NCSTR, PH, TU, 15)	
03439.	38	CALL XLIN(PRESS, GAMAG, NCSTR, PH, GAMA, 16)	
03440.	39	CALL XLIN(PRESS, AMWG, NCSTR, PH, AMW, 17)	
03441.	40	160 IF (CSCDEF(1).NE.0.0) CSTAR=CSCDEF(1)+CSCDEF(2)*PON+CSCDEF(3)*PON**2	

03442.	41	R=1545.864/AM	
03443.	42	GAMASQ=GAMA*(2./(GAMA+1.))**((GAMA+1.)/(GAMA-1.))	39280
03444.	43	R0=(DPHDT+GAMASQ*CSTAR*12.*AT*TPK*PH/VOLUME)/(GAMASQ*CSTAR**2.)	39290
03445.		X*DELF*12.**AUTOT/(VOLUME*GHOT))	39300
03446.	44	AKRST=R0/PH**AKR(3)	39310
03447.	45	210 CONTINUE	
03448.	46	240 IF(OPH)250,250,260	
03449.	47	250 CONTINUE	39390
03450.	48	AKRST=AKR(36)	39400
03451.	49	260 TINC2=TIME	39410
03452.	50	300 RETURN	39500
03453.	51	END	

SUBROUTINE R05TSD

SYMBOL

REFERENCES

10	-	23	24				
20	-	24	24	25			
30	-	25	26				
80	-	27					
90	-	27	28				
100	-	29					
110	-	29	30	31			
120	-	30	30	32			
140	-	34					
150	-	35	36				
160	-	35	35	40			
210	-	23	23	24	27	27	45
240	-	46					
250	-	46	46	47			
260	-	46	49				
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AAH	-	19C0					
ABCYL	-	15C0					
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ACCLL	-	15C0					
ACG	-	12C0					
ACK	-	13C0					
AINCHI	-	15C0					
AINCA	-	18C0					
AIT	-	19C0					
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AKRADJ	-	17C0					
AKRM	-	6C0					
AKRN	-	6C0					
AKRSI	-	18C0	44	48			
AKSLOT	-	7C0					
AKU	-	7C0					
AMACH	-	15C0					
AMPN	-	18C0					
AMA	-	18C0	39AG	41			
AMAG	-	9C0	39AG				
ANIBO	-	15C0					
ANK	-	12C0					
ANLOPS	-	15C0					
APHI	-	15C0					
AT	-	18C0	43				
BLK021	-	3C0					
BLK023	-	4C0					
COMA	-	15C0					
COMG	-	16C0					
COMS	-	17C0					
CONSTS	-	5C0					

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SUBROUTINE ROSTER

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CSTAR	-	9CU	36AG	40	43	43	
CSTR	-	9CU	36AG				
DATA	-	4CU					
DELF	-	11CU	43				
DELT	-	15CU					
DELTA	-	18CU					
DELTSS	-	15CU					
DELTST	-	16CU					
DELTTO	-	16CU					
DELZ	-	11CU					
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DPMYL	-	14CU					
DPMUT	-	16CU					
GAMA	-	9CU	38AG	42	42	42	42
GAMAG	-	9CU	38AG				
GAMASQ	-	42	43	43			
GHUT	-	5CU	43				
HCU	-	11CU					
HM2	-	12CU					
HMW	-	12CU					
I	-	29	30	32	32	33	33
IEND	-	17CU					
IFLAW	-	28CU					
INPUTD	-	6CU					
INPUTE	-	7CU					
INPUTF	-	8CU					
INPUTG	-	9CU					
INPUTH	-	10CU					
INPUTU	-	11CU					
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LISTI	-	24G	30				
NAKEND	-	7CU					
NAKH	-	7CU					
NCSCUE	-	9CU					
NCSTM	-	9CU	35	36AG	37AG	38AG	39AG
NPH	-	8CU	23	24	26AG	29	46
NTAB	-	7CU					
NUNIT	-	4CU					
NARUS	-	4CU					
P	-	18CU					
PA	-	11CU					
PANMAA	-	28CU					
PARIP	-	18CU					
PARMQ	-	19CU					
PCTAB	-	8CU					
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PRESS	-	9C0		36AG	37AG	38AG		39AG											
PRNT	-	15C0																	
R	-	9C0		41#															
KADIAN	-	5C0																	
KB	-	16C0		43#		44													
KDSTSD	-	1EY																	
KBZ	-	16C0																	
RHI	-	12C0																	
RNI	-	13C0																	
SPHDT	-	19C0																	
SPODDT	-	19C0																	
STATIC	-	2LG		3C0															
STDYST	-	10C0		27															
STFLAG	-	10C0																	
T	-	18C0																	
TABU	-	7C0																	
TABI	-	7C0																	
TAUAUP	-	16C0																	
TAUZ	-	16C0																	
TBLAKR	-	7C0																	
TCOMB	-	9C0		37AG															
TIMACKR	-	7C0																	
TIMCK2	-	14C0		21#	22	22#	25	49#											
TIME	-	18C0		21	22	22	24	25	26AG	30	33	49							
TIMEPH	-	8C0		24	26AG	30	33												
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TO	-	20C0		37AG															
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UT	-	15C0																	
VCH	-	12C0		34															
VCN	-	13C0		34															
VF	-	16C0																	
VFH	-	19C0		34															
VFIIO	-	12C0																	
VFINI	-	19C0																	
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03454*	1	SUBROUTINE RBSUB(15)	
03455*		CC	39710
03456*		C SUBROUTINE RBSUB DETERMINES THE PROPELLANT BURNING RATE AT EACH	39730
03457*		C INCREMENT DIVIDING PLANE (SECTION 4.3.2).	39740
03458*		CC	39760
03459*	2	COMMON/INPUTA/DTAUE,DH1,RH,ADHM,HHR	
03460*	3	COMMON/INPUTE/AKG(15),AKU(15),AKK(15),AKSLOT(12),NAKR,TIMAKR(125),	
03461*		ITBLAKR(125),NAKEND,TAB(125,8),IADD(125,8),RTAB(8)	
03462*	4	COMMON/INPUT1/AINC(10,10),ANOT(10),RF(10,8),R(10,8),TAUW	
03463*	5	COMMON/INPUTM/STFLAG,STOYST,DELTS1,DELTS5,DELTS10	
03464*	6	COMMON/INPUTU/DELTA,PA,PHI,HCO,DELTA2,KDUMP(12)	
03465*	7	COMMON/DUNYM/CKTIME,NIEST4	
03466*	8	COMMON/CONA/DELTA,APHI,WDOT1,ANIBU,TIMELW,UT,ANLOPS,ACCEL,	
03467*		ABCYL,PKNT(101,15),AINC1,ANACH,ZCALC(101)	
03468*	9	COMMON/CONG/TAU2(101,8),RU2(101,8),PD(101),TAUWDP(101,8),RB,VF,	
03469*		DDWDT,VP	
03470*	10	COMMON/CONU/RFH1,RBH1,ALPX,ALPY,APX,APY	
03471*	11	COMMON/COMS/TPR,AKRADJ,IEND	
03472*	12	COMMON/PARNB/AP,PMIN,PMAX,WDOT1,111,11J,WDOTD,NSLOT,NTABE,TOFLAG,	
03473*		1 BRRDOT,115,151,152,HI,SCUR(10,2)	
03474*	13	COMMON/PARHF/PH,TIME,AINCW,T,P,DELTA,U,PON,DIS,AMPN,AT,AMH,AKRST	
03475*	14	COMMON/PARHH/DIE,BOE	
03476*	15	COMMON/PARNR/KSLOT,KSLDT,KSLDTF,SLTFLG	
03477*	16	COMMON/PARMS/ICNN	
03478*	17	COMMON/PARNAB/HSUBMG,NSUBMG,IEND	
03479*	18	COMMON/INPUTJ/NDT,TIMEDT(25),TDELDT(25),ENBAR,EREXP,PONBAR	
03480*	19	COMMON/AFTADJ/TAUAF(125),TENAF(125),NAKAF	
03481*	20	COMMON/HEADADJ/TAUHED(125),TEMHED(125),NAKHED	
03482*	21	COMMON/TEMPFAC/SIGNAP,KEFTEN,BLKTEN	
03483*	22	COMMON/SECTOR/NSCTRS	
03484*	23	DIMENSION TEMP1(25),TEMP2(25)	
03485*	24	SECH=NSCTRS	
03486*	25	IF (NTEST4-1)10,210,10	39790
03487*	26	10 CONTINUE	39800
03488*	27	IF (STFLAG)20,160,20	39810
03489*	28	20 CONTINUE	39820
03490*	29	IF (STOYST-1.0)30,160,160	39830
03491*	30	IF (111-1)40,40,50	39840
03492*	31	P=PH	39850
03493*	32	GO TO 60	39860
03494*	33	50 IF (NSUBMG.EQ.U .AND. IEND.EQ.2) GO TO 60	
03495*	34	P=PD(111-1)	39870
03496*	35	CONTINUE	39880
03497*	36	110 CALL RBSUB	39970
03498*	37	IF (ICNN.EQ.5) RETURN	39980
03499*	38	AKRTP=AKRST	39990
03500*	39	GO TO 210	
03501*	40	160 NTEST4=1	40090
03502*	41	210 IF (P-PA)220,220,230	40150
03503*	42	220 RD=U.	40160

03504*	43		GO TO 640	40170
03505*	44	230	IF (SLTFLG) 270, 270, 240	40180
03506*	45	240	IF (F-PA) 250, 250, 240	40190
03507*	46	250	R0SLOT=C.0	40200
03508*	47		GO TO 640	40210
03509*	48	260	R0SLOT=AKSLOT(1)*P**AKSLOT(2)	40220
03510*	49		GO TO 640	40230
03511*	50	270	AKRADJ=C.0	
03512*	51		GKTEMP=BLKTEM	
03513*	52		IF (BLKTEM.GT.1.0) GO TO 275	
03514*	53		GKTEMP=REFTEM	
03515*	54		IF (15.LT.1.0H.15.GT.0) GO TO 273	
03516*	55		NIWNTAB(15)	
03517*	56		IF (INTAB(15).LE.0) GO TO 275	
03518*	57		DO 271 I2=1,NT	
03519*	58		TEMP1(I2)=TAB1(I2,15)	
03520*	59	271	TEMP2(I2)=TAB2(I2,15)	
03521*	60		DELWL=TAUWOP(111,15)-TAUZ(111,15)	
03522*	61		DELWL=AMAX1(0.0,DELWL)	
03523*	62		CALL XLIN(TEMP1,TEMP2,NT,DELWL,GKTEMP,401)	
03524*	63		GO TO 275	
03525*	64	273	IF (1END.LQ.2) GO TO 274	
03526*	65		IF (NAKHEO.LE.0) GO TO 275	
03527*	66		DELWL=C.0	
03528*	67		DO 273 I2=1,NSCTRS	
03529*	68	2730	DELWL=DELWL+TAUZ(1,12)	
03530*	69		DELWL=DELWL/SECN	
03531*	70		CALL XLIN(TAUHED,TEMHED,NAKHED,DELWL,GKTEMP,402)	
03532*	71	274	IF (NAKFT.LL.0) GO TO 275	
03533*	72		DELWL=TAUZ(11+1,1)	
03534*	73		CALL XLIN(TAUFT,TEMAFT,NAKFT,DELWL,GKTEMP,403)	
03535*	74	275	AKRADJ=EXP(SIGNAP*(GKTEMP-REFTEM))-1.0	
03536*	75		AKK2=AKR(2)*(1.0+AKRADJ)	
03537*	76		AKK4=AKR(4)*(1.0+AKRADJ)	
03538*	77		AKK38=AKR(38)*(1.0+AKRADJ)	
03539*	78	278	CONTINUE	
03540*	79		GCR=AKG(1)+AKG(2)*P**AKG(3)+AKG(4)*P**AKG(5)	40240
03541*	80		UCK=AKU(1)+AKU(2)*P**AKU(3)+AKU(4)*P**AKU(5)	40250
03542*	81		G=12.*DELTA*U	40260
03543*	82	320	CONTINUE	40350
03544*	83		IF (STDYST.GT.U.0.AND.10FLAG.LI.1.0) AKHTMP=AKR2	40360
03545*	84		IF (GCR-G) 330, 330, 340	40370
03546*	85	330	IF (UCK-U) 350, 350, 340	40380
03547*	86	340	RU=AKR(35)+AKHTMP*P**AKR(37)+AKR38 *P**AKR(39)	40390
03548*	87		GO TO 640	40400
03549*	88	350	RU=AKR(1)+AKHTMP*P**AKR(3)+AKK4 *P**AKR(5)	40410
03550*	89		IF (U) 360, 370, 360	40420
03551*	90	360	RU=RU+AKR(6)*U**AKR(7)+AKR(8)*U**AKR(9)+AKR(14)*P**AKR(15)*U**AKR(	40430
03552*			X16)+AKR(17)*P**AKR(18)*U**AKR(19)	40440
03553*	91		GO TO 450	40450

03554*	92	370	IF (AKR(7)) 390, 380, 390	40460
03555*	93	380	RD=RD+AKR(6)	40470
03556*	94	390	IF (AKR(9)) 410, 400, 410	40480
03557*	95	400	RD=RD+AKR(8)	40490
03558*	96	410	IF (AKR(16)) 430, 420, 430	40500
03559*	97	420	RD=RD+AKR(14)*P**AKR(15)	40510
03560*	98	430	IF (AKR(19)) 450, 440, 450	40520
03561*	99	440	RD=RD+AKR(17)*P**AKR(18)	40530
03562*	100	450	IF (G) 460, 470, 460	40540
03563*	101	460	RD=RD+AKR(10)*G**AKR(11)+AKR(12)*G**AKR(13)+AKR(20)*P**AKR(21)*G**	40550
03564*			XAKR(22)+AKR(23)*P**AKR(24)*G**AKR(25)	40560
03565*	102		GO TO 550	40570
03566*	103	470	IF (AKR(11)) 490, 480, 490	40580
03567*	104	480	RD=RD+AKR(10)	40590
03568*	105	490	IF (AKR(13)) 510, 500, 510	40600
03569*	106	500	RD=RD+AKR(12)	40610
03570*	107	510	IF (AKR(22)) 530, 520, 530	40620
03571*	108	520	RD=RD+AKR(20)*P**AKR(21)	40630
03572*	109	530	IF (AKR(25)) 550, 540, 550	40640
03573*	110	540	RD=RD+AKR(23)*P**AKR(24)	40650
03574*	111	550	IF (AKR(26)) 570, 560, 570	40660
03575*	112	560	RD=RD+AKR(26)/AKR(27)*P**AKR(28)+AKR(29)*P**AKR(30)	40670
03576*	113	570	IF (G) 580, 640, 580	40680
03577*	114	580	IF (BTAOE) 590, 630, 590	40690
03578*	115	590	THE=BIE=BOE	40700
03579*	116		K=TAUZ(1,1)	
03580*	117	600	IF (THE - K) 620, 620, 610	
03581*	118	610	HHR=R + BOE	
03582*	119		GO TO 630	40730
03583*	120	620	HHR=BIE	40740
03584*	121	630	HRB=HHR+ALHCW	40750
03585*	122		IF (HRB.LT.HHR) HRB=HHR	40760
03586*	123		IF (HRB.EQ.0.0) RETURN	40770
03587*	124		RD=RD+AKR(31)*G**AKR(32)*EXP (-AKR(34)*RBH1*DELF/G)/HRB**AKR(33)	40780
03588*	125	640	CONTINUE	
03589*	126		RETURN	
03590*	127		END	

SYMBOL	REFERENCES
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20	27 27 28
30	29 30
40	30 31
50	30 33
60	32 33 35
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160	27 29 29 40
210	25 37 41
220	41 41 42
230	41 44
240	44 45
250	45 45 46
260	45 48
270	44 44 50
271	57 57
273	54 64
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275	52 59 63 65 71 74
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360	89 89 90
370	89 92
380	92 93
390	92 92 94
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410	94 94 96
420	96 97
430	96 96 98
440	98 99
450	91 90 98 100
460	100 100 101
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500	105 105
510	105 105 107
520	107 108
530	107 107 109
540	109 110
550	102 109 109 111
560	111 111 112
570	111 113
580	113 113 114
590	114 114 115

600	-	117*																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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SUBROUTINE RDSUB(IS)

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03591*	1		SUBROUTINE RBVSUB	57690
03592*			CC	57750
03593*			C SUBROUTINE RBVSUB CHECKS THE VALIDITY OF THE BURNING RATE EQUATION	57770
03594*			C CONSTANTS AND PRINTS APPROPRIATE DIAGNOSTIC COMMENTS.	57780
03595*			CC	57800
03596*	2		COMMON/INPUTE/AKG(5),AKU(5),AKR(39),AKSLUT(2),NAKR,TIMAKR(25),	
03597*			ITBLAKR(25),NAKEND,TAB1(25,0),TABU(25,0),N1AB(8)	
03598*	3		COMMON/PARMS/ICNN	
03599*	4		IF(AKG(1))30,10,30	57820
03600*	5	10	IF(AKG(2))30,20,30	57830
03601*	6	20	IF(AKG(4))30,80,30	57840
03602*	7	30	IF(AKU(1))60,40,60	57850
03603*	8	40	IF(AKU(2))60,50,60	57860
03604*	9	50	IF(AKU(4))60,80,60	57870
03605*	10	60	WRITE(6,7J)	57880
03606*	11	70	FORMAT(32H,INVALID GCR OR UCR COEFFICIENTS)	57890
03607*	12		ICNN = 5	57900
03608*	13		RETURN	57910
03609*	14	80	IF(AKR(26))90,140,90	57920
03610*	15	90	IF(AKR(27))100,120,130	57930
03611*	16	100	WRITE(6,11J)	57940
03612*	17	110	FORMAT(21H,INVALID KR27 OR KR29)	57950
03613*	18		ICNN = 5	57960
03614*	19		RETURN	57970
03615*	20	120	IF(AKR(29))130,100,130	57980
03616*	21	130	IF(AKR(29))100,140,140	57990
03617*	22	140	RETURN	58000
03618*	23		END	

SYMBOL

REFERENCES

10	-	4	5*					
20	-	5	6*					
30	-	4	4	5	5	6	6	7*
40	-	7	8*					
50	-	8	9*					
60	-	7	7	8	8	9	9	10*
70	-	16AK	11*					
80	-	6	9	14*				
90	-	14	14	15*				
100	-	15	16*	20	21			
110	-	16AK	17*					
120	-	15	20*					
130	-	15	20	20	21*			
140	-	14	21	21	22*			
AKG	-	2C0	4	5	6			
AKR	-	2C0	14	15	20	21		
AKSL0T	-	2C0						
AKU	-	2C0	7	8	9			
ICHN	-	3C0	12*	18*				
INPUTE	-	2C0						
NAKEND	-	2C0						
NAKR	-	2C0						
NTAB	-	2C0						
PARMS	-	3C0						
RBVSUB	-	1EY						
TABD	-	2C0						
TAB1	-	2C0						
TBLAKR	-	2C0						
TIMAKR	-	2C0						

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03669*	37	KP1=KP+1	
03670*	38	A1NCH=A1NCH(KP)	
03671*	39	A1NCY=A1NCH(KP1)	
03672*	40	DO512=1,NSCTRS	
03673*	41	APT(12)=APRTSC(KP,12)	
03674*	42	5 ALP5(12)=ALPSEC(KP,12)	
03675*	43	IF(TIME)10,10,20	
03676*	44	10 NTEST=0	41360
03677*	45	20 IF(NTEST.EQ.1)GO TO 80	41380
03678*	46	IF(STDYST.LT.1.0)GO TO 80	
03679*	47	NTEST=1	41460
03680*	48	40 IF(111.GT.1)GO TO 220	
03681*	49	115=1	41670
03682*	50	ABSLOT=0.0	
03683*	51	VGPORT=0.0	41740
03684*	52	TOFLAG=0.0	41900
03685*	53	DO912=1,NSCTRS	
03686*	54	IS=12	
03687*	55	CALL RUSUB(IS)	
03688*	56	IF(1CHN.EQ.5)RETURN	
03689*	57	90 R0Z(1,15)=R0	
03690*	58	220 IF(SLFLG.GT.0.0)GO TO 970	
03691*	59	A1NCH1=ZCALC(111)	41940
03692*	60	IF(111.EQ.1)A1NCH1=0.0	41950
03693*	61	240 111=111+1	41960
03694*	62	112=112+1	41970
03695*	63	A1NCH=ZCALC(111)	41980
03696*	64	241 CONTINUE	
03697*	65	DWLEN=0.0	
03698*	66	ALPTEN=0.0	
03699*	67	APPTEN=0.0	
03700*	68	APHTEN=0.0	
03701*	69	AFPTEN=0.0	
03702*	70	AFXTEN=0.0	
03703*	71	AFY1EN=0.0	
03704*	72	DELZT=0.0	
03705*	73	DO92312=1,NSCTRS	
03706*	74	IS=12	
03707*	75	A1NCH=ZCALC(111)	
03708*	76	A1NCH1=ZCALC(111-1)	
03709*	77	TAU=TAUZ(111,15)	
03710*	78	IPRHS(12)=0	
03711*	79	IFLSEC(12)=0	
03712*	80	TAUX=TAUXRP(KP,15)	
03713*	81	TAUY=TAUYRP(KP1,15)	
03714*	82	KFX=RF1(KP,15)	
03715*	83	KFY=RF1(KP1,15)	
03716*	84	ALPA=ALPSEC(KP,15)*SECN	
03717*	85	ALPY=ALPSEC(KP1,15)*SECN	
03718*	86	APX=APRTSC(KP,15)*SECN	

G3719*	07	APY=APNTSC(KP1,IS)*SECN	
G3720*	08	APX=AFRPSC(KP,IS)*SECN	
G3721*	09	AFY=AFRPSC(KP1,IS)*SECN	
G3722*	90	IF(III.GT.2)GO TO 242	
G3723*	91	ALP=ALPX	
G3724*	92	ALPS(15)=ALP/SECN	
G3725*	93	AP=APX	
G3726*	94	APT(15)=AP/SECN	
G3727*	95	RI=RF(11,15)	
G3728*	96	242 THOLD=TAU	42010
G3729*	97	IF(5LTF LG.GT.4.1)GO TO 290	
G3730*	98	TEMP=(AINCW-AINCX)/(AINCY-AINCX)	42020
G3731*	99	DELZ=AINCW-AINCHI	42030
G3732*	100	IF(AINCW-AINCY)270,270,250	42040
G3733*	101	250 CONTINUE	42050
G3734*	102	IF(AINCY- SCUR(115,1))	1260,260,280
G3735*	103	260 CONTINUE	42060
G3736*	104	IF(15.LT.HSCTRS)GO TO 923	42070
G3737*	105	111=111-1	
G3738*	106	110=110-1	42080
G3739*	107	RETURN	42090
G3740*	108	270 IF(AINCW- SCUR(115,1))	1290,280,280
G3741*	109	280 AINCW=SCUR(115,1)	42110
G3742*	110	DELZ=AINCW-AINCHI	42120
G3743*	111	TEMP=(AINCW-AINCX)/(AINCY-AINCX)	42130
G3744*	112	290 PRNT(111,14)=0.0	42140
G3745*	113	TEMP1=(AINCHI-AINCX)/(AINCY-AINCX)	
G3746*	114	AFH1=AFX+(AFY-AFX)*TEMP1	
G3747*	115	APH1=APT(15)*SECN	
G3748*	116	ALPH1=ALPS(15)*SECN	
G3749*	117	RBH1=RBZ(111-1,15)	
G3750*	118	RFH1=RFY+(RFY-RFX)*TEMP1	
G3751*		C THETA CALCULATIONS	
G3752*	119	TAUMW=TAUWDP(111,15)	
G3753*	120	TAUMH1=TAUADP(111-1,15)	
G3754*	121	RF=RFY+(RFY-RFX)*(AINCW-AINCX)/(AINCY-AINCX)	
G3755*	122	DO 292 I=1,HSLOT	
G3756*	123	IF(ZCALC(111-1).LE.SCUR(1,1).AND.ZCALC(111).GT.SCUR(1,1))	
G3757*		\$ GO TO 295	
G3758*	124	IF(ZCALC(111-1).LT.SCUR(1,2).AND.ZCALC(111).GE.SCUR(1,2))	
G3759*		\$ GO TO 295	
G3760*	125	292 CONTINUE	
G3761*	126	IF((TAUMW-.0099).GT.THOLD .AND. (TAUMH1-.0099).GT.TAUZ(111-1,15))	
G3762*		\$ GO TO 294	
G3763*	127	GO TO 295	
G3764*	128	294 THETA(111-1,15)=ATAN((RFH1-(TAUMH1-TAUZ(111-1,15))-(RF-(TAUMW-	
G3765*		THOLD)))/(AINCW-AINCHI))	
G3766*	129	THETA(111-1,15)=ABS(THETA(111-1,15))	
G3767*	130	295 IF(AINCY-AINCY)310,300,310	42340
G3768*	131	300 ALP=ALPY	

G3769.	132	ALPS(15)=ALP/SECN	
G3770.	133	AP=APY	
G3771.	134	APT(15)=AP/SECN	42380
G3772.	135	RF=RFY	
G3773.	136	AFF=AFY	42400
G3774.	137	CALL PARTBN(IPBNFL,15)	42410
G3775.	138	ALPS(15)=ALP/SECN	
G3776.	139	ALPHIS(15)=ALPHI/SECN	
G3777.	140	IFLSEC(15)=IFLS	
G3778.	141	IPBNFS(15)=IPBNFL	
G3779.	142	GO TO 410	
G3780.	143	310 IF (TAUMW) J15,J20,315	42420
G3781.	144	315 IF (THOLD-TAUMW) 330,330,320	42440
G3782.	145	320 ALP=0.	45120
G3783.	146	ALPS(15)=ALP/SECN	42450
G3784.	147	AFF=0.0	
G3785.	148	CALL PARTBN(IPBNFL,15)	42460
G3786.	149	IPBNFS(15)=IPBNFL	
G3787.	150	RF=RFY*(RFY-RFX)*(AINCW-AINCX)/(AINCY-AINCX)	42480
G3788.	151	IFLSEC(15)=IFLS	
G3789.	152	ALPS(15)=ALP/SECN	
G3790.	153	ALPHIS(15)=ALPHI/SECN	
G3791.	154	AP=J.14159*RF**2.-AFF	42500
G3792.	155	APT(15)=AP/SECN	
G3793.	156	GO TO 410	42510
G3794.		C IF PERIMETER LENGTH AT UPSTREAM OR DOWNSTREAM R.P. GOES TO ZERO,	
G3795.		C CHANGE PERIMETER INTERPOLATION SCHEME	
G3796.	157	330 IF (ALPX.EQ.0.0 .OR. ALPY.EQ.0.0) GO TO 331	
G3797.	158	GO TO 339	
G3798.	159	331 IF (ALPX.EQ.ALPY) GO TO 339	
G3799.	160	DO 334 I=1,KPLANE	
G3800.	161	ISAV=I	
G3801.	162	IF (AINCX.EQ.AINCIN(I)) GO TO 336	
G3802.	163	334 CONTINUE	
G3803.	164	WRITE(6,335)	
G3804.	165	335 FORMAT('AINCX NOT EXACTLY EQUAL TO AN AINCIN(I) VALUE IN SEGSD')	
G3805.	166	ICH=5	
G3806.	167	RETURN	
G3807.	168	336 L=ISAV	
G3808.	169	LL=L	
G3809.	170	TAUMAX = TAUMX	
G3810.		C TAUS IS APPROXIMATION OF TAU AT SLOT FACE OR INTERSECTION WITH	
G3811.		C DOWNSTREAM I.D.P.	
G3812.	171	TAUS=TAUZ(111,15)	
G3813.	172	DO 3300 IJ=1,NSLUT	
G3814.	173	IF (SCUR(IJ,1).GT.ZCALC(111-1) .AND. SCUR(IJ,1).LT.ZCALC(111)	
G3815.		5 .AND. TAUMX.GT.TAUMY) TAUS=TAUZ(111-1,15)	
G3816.	174	3300 CONTINUE	
G3817.	175	IF (TAUS.GT.TAUMX) TAUS=TAUMX	
G3818.	176	3372 TAUDM=TAUMAX-(TAUMW-TAUS)	

G3819*	177		NDUMX=NGEQ(L)	
G3820*	178		DO 3373 I=1,NDUMX	
G3821*	179		DUMX1(I)= RPL(I,L)	
G3822*	180	3373	DUMX2(I)=ALPPL(I,L)	
G3823*	181		CALL XLIN(DUMX1,DUMX2,NDUMX,TAUDUM,ALP,20)	
G3824*	182		ALPS(15)=ALP/SECN	
G3825*	183		ALPBOY=ALP	
G3826*	184		IF(LL.EQ.L) ALPBOX=ALP	
G3827*	185		IF(LL.NE.L) GO TO 3374	
G3828*	186		L=L+1	
G3829*	187		TAUMAX = TAUMY	
G3830*	188		GO TO 3372	
G3831*	189	3374	ALP=ALPBOX+(ALPBOY-ALPBOX)*(AINCW-AINCX)/(AENCY-AINCX)	
G3832*	190		ALPS(15)=ALP/SECN	
G3833*	191		CALL PARTON(IPDNFL,15)	
G3834*	192		ALPHIS(15)=ALPHI/SECN	
G3835*	193		ALPS(15)=ALP/SECN	
G3836*	194		IFLSEC(15)=IFLS	
G3837*	195		IPDNFS(15)=IPDNFL	
G3838*	196		GO TO 3390	
G3839*	197	339	ALP=ALPX+(ALPY-ALPX)*(AINCW-AINCX)/(AENCY-AINCX)	42520
G3840*	198		ALPS(15)=ALP/SECN	
G3841*	199	3390	RF=RFX*(RFY-RFX)*(AINCW-AINCX)/(AENCY-AINCX)	42530
G3842*	200		AFX=3.14159*RFX**2-APX	42560
G3843*	201		AFY=3.14159*RFY**2-APY	42570
G3844*	202	350	CONTINUE	42610
G3845*	203		TAU=THOLD	42620
G3846*	204		TEMP=(AINCW-AINCX)/(AENCY-AINCX)	42630
G3847*	205		IF(TAUMX)370,360,370	42640
G3848*	206	360	AFF=ALPX*(TAUMX-TAU)*(1.-TEMP)+AFY*TEMP**2	42650
G3849*	207		GO TO 400	42660
G3850*	208	370	IF(TAUMY)390,380,390	42670
G3851*	209	380	AFF=ALPY*(TAUMY-TAU)*TEMP+AFX*(1.-TEMP)**2	42680
G3852*	210		GO TO 400	42690
G3853*	211	390	AFF=AFX*(1.-TEMP)+(TAUMY-TAUMX)*TEMP/TAUMX-(TAUMY-TAUMX)*TEMP**2	42700
G3854*			X/TAUMX)+AFY*(TAUMX*TEMP/TAUMY-(TAUMX-TAUMY)*TEMP**2/TAUMY)	42710
G3855*	212	400	AP=3.14159*RF**2-AFF	42720
G3856*	213		APT(15)=AP/SECN	
G3857*	214	410	CONTINUE	
G3858*	215		IF(KDUMPL(6))470,470,450	42730
G3859*	216	450	CONTINUE	42800
G3860*	217		WRITE(6,460)AP,ALP,AFF,ALPX,ALPY,APX,APY,AINCW,AINCX,AENCY,TEMP,	42810
G3861*			X111	42820
G3862*	218	460	FORMAT(4H AP=1PE11.4,2X,4HALP=1PE11.4,2X,4HAFF=1PE11.4,2X,5HALPX=1	42830
G3863*			XPE11.4,2X,5HALPY=1PE11.4,2X,4HAPX=1PE11.4,2X,4HAPY=1PE11.4/7H AINC	42840
G3864*			XW=1PE11.4,2X,6HAINCW=1PE11.4,2X,6HAENCY=1PE11.4,2X,5HTEMP=1PE11.4,	42850
G3865*			+ 2X,4H111=12)	42860
G3866*	219	470	CONTINUE	
G3867*	220	500	CALL RNSUB(15)	42880
G3868*	221		IF(1CHN.EQ.5) RETURN	42960

03869.	222	TOFLAG=C.O	42970
03870.	223	ROZ(11J,15)=RB	
03871.	224	IF (SLTFLG.GT.4.1)GO TO 820	
03872.	225	510 CONTINUE	43000
03873.	226	DWDOT=DELZ*DELF*(ALPHI*RBHI+ALP*RB)/2.0	
03874.	227	IF (TIME.LT.DELT.AND.STFLAG.GT.0.0)DWDOT=0.0	
03875.	228	IF (PCTAB)530,530,520	43020
03876.	229	520 CONTINUE	43030
03877.	230	DWDOT=DWDOT+PCTAB	43040
03878.	231	530 DWDGT=ANAX1(DWDOT,0.0)	43050
03879.	232	DWTEH=DWTEH+DWDOT/SECN	
03880.	233	820 IF (SLTFLG.LT.0.0)GO TO 923	
03881.	234	IF (SLTFLG.GT.4.1)GO TO 922	
03882.	235	830 CONTINUE	43730
03883.	236	840 CONTINUE	
03884.	237	870 CONTINUE	43880
03885.	238	DWDOT=DWDOT	
03886.	239	IF (TIME.LT.DELT.AND.STFLAG.GT.0.0) DWTEH=0.0	
03887.	240	ABCYL=ABCYL+(ALPHI+ALP)*DELZ/(SECN*2.0)	
03888.	241	900 VFI=(3.14159*RFHI**2.-APHI+3.14159*RF**2.-AP)*	43970
03889.		XDELZ/(SECN*2.0)	
03890.	242	IF (VFI)910,910,920	44000
03891.	243	910 CONTINUE	44010
03892.	244	VFI=C.O	44020
03893.	245	920 VF=VF+VFI	44030
03894.	246	922 APTEH=APTEH+APT(15)	
03895.	247	APTEH=APTEH+APHI/SECN	
03896.	248	AFTEH=AFTEH+AFF/SECN	
03897.	249	AFYTEH=AFYTEH+AFY/SECN	
03898.	250	AFXTEH=AFXTEH+AFX/SECN	
03899.	251	DELZT=DELZT+DELZ/SECN	
03900.	252	IF (IS.EQ.1)VT(111)=0.0	
03901.	253	VT1=(APHI+AP)*DELZ/(SECN*2.0)	
03902.	254	VT2=APHI*(AINCHI-ZCALC(111)-1)/SECN	
03903.	255	VT3=AP*(ZCALC(111)-AINCW)/SECN	
03904.	256	VT(111)=VT(111)+ANAX1(0.0,VT1)+ANAX1(0.0,VT2)+ANAX1(0.0,VT3)	
03905.	257	ALPTEH=ALPTEH+ALPS(15)	
03906.	258	VPT=(APHI+AP)*(AINCW-AINCHI)/2.0	
03907.	259	VF=VF+VPT/SECN	
03908.	260	923 CONTINUE	
03909.	261	ALPHI=C.O	
03910.	262	DO924I2=1,NSCTRS	
03911.	263	924 ALPHI=ALPHI+ALPHIS(I2)	
03912.	264	IF (SLTFLG.LT.0.0)GO TO 930	
03913.	265	ALP=ALPTEH	
03914.	266	AP=AFTEH	
03915.	267	APHI=APHTEH	
03916.	268	AFF=AFTEH	
03917.	269	AFX=AFXTEH	
03918.	270	AFY=AFYTEH	

03919*	271	DELZ=DELZT	
03920*	272	D=DOT(D,ITEH)	
03921*	273	APY=APORT(KP)	
03922*	274	APY=APORT(KP)	
03923*	275	IF(SLTFLG.GT.4)GO TO 970	
03924*	276	DELZ=DELZ	
03925*	277	IF(DELZ.LT.1)GO TO 925	
03926*	278	RF=RF	
03927*	279	AINC=AINCW	
03928*	280	AINC=AINCWS	
03929*	281	AINC=AINCHI	
03930*	282	AINC=AINCHS	
03931*	283	925 CALL AINSUB(IE)	
03932*	284	DELZ=DELZS	
03933*	285	IF(IL.LQ.2)ICNN=5	44220
03934*	286	IF(ICHN.EQ.5) RETURN	44230
03935*	287	PU=P*(10/1)*(GAMA/(GAMA-1.))	44240
03936*	288	930 AMACH=SQRT((TU-T)*2./((GAMA-1.)*T))	44250
03937*	289	PRNT(111, 1)=P	
03938*	290	PRNT(111, 2)=P	
03939*	291	PRNT(111, 3)=T	
03940*	292	PRNT(111, 4)=U	
03941*	293	PRNT(111, 5)=AMACH	
03942*	294	PRNT(111, 6)=ALP	
03943*	295	PRNT(111, 7)=AP	
03944*	296	PRNT(111, 9)=WDOT	
03945*	297	PRNT(111,10)=QW001	
03946*	298	PRNT(111,12)=U.0	
03947*	299	PRNT(111,13)=U.0	
03948*	300	DO93512=1,HSCTRS	
03949*	301	PRNT(111,12)=PRNT(111,12)+RUZ(111,12)/SECN	
03950*	302	935 PRNT(111,13)=PRNT(111,13)+TAUZ(111,12)/SECN	
03951*	303	IF(SLTFLG.LT.3)GO TO 1200	
03952*	304	WSPORT=WSPORT+DELTA*DELZ*(APHI+AP)/2.0	
03953*	305	IF(AINC= SCUR(115,1)	11210,940,940
03954*	306	940 CONTINUE	44410
03955*	307	SLTFLG=1.0	44420
03956*	308	ISI=111	44430
03957*	309	IF(KDUMP(13)1970,970,950	44440
03958*	310	950 CONTINUE	44450
03959*	311	WRITE(6,960)SLTFLG,115,151,152,AINCX,AINCX,AINCW,	44460
03960*		XCOR(115,1),SCUR(115,2),TSLOTF(115),TSLOTA(115),111,ZCALC(111)	44470
03961*	312	960 FORHAT(15,7)SLTFLG=F4.0,2X,4H115=13,2X,4H152=13,2X,6H	44480
03962*		XAINCX=1PE11.4,2X,6HAINCY=1PL11.4,2X,6HAINCW=1PE11.4,2X,6H	44490
03963*		X5,1)=1PE11.4,2X,12HSCUR(115,2)=1PL11.4,2X,12H151,OTF(115)=1PE11.4,2	44500
03964*		XX,12H151,OTF(115)=1PL11.4,2X,6HZCALC(13,2H)=1PE11.4)	44510
03965*	313	970 IF(SLTFLG -1.0)1090,980,1020	44520
03966*	314	980 CONTINUE	44540
03967*	315	SLTFLG=2.0	44550
03968*	316	990 IF(SCUR(115,1)-AINCX)1010,1000,1000	44560

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03969*	317	1000	CONTINUE	44570
03970*	318		RETURN	
03971*	319	1010	RSLOTF=RFY+(RFY-RFX)*(SCUR(115,1)-A1NCX)/(A1NCY-A1NCX)	44590
03972*	320		SLTFLG=3.0	44600
03973*	321		GO TO 1080	44610
03974*	322	1020	IF(SLTFLG -2.0)1990,990,1030	
03975*	323	1030	CONTINUE	44630
03976*	324		IF(SLTFLG -3.0)1080,1080,1070	
03977*	325	1040	ALP=0.0	
03978*	326		DO 10412=1,NSCTRS	
03979*	327		IF(IPBNFS(12).LT.1)GO TO 1043	
03980*	328		A1NCW=A1NCWS	
03981*	329		RF=RF5	
03982*	330		A1NCHI=A1NCWS	
03983*	331		IF(1FLSEC(12).EQ.0)ALPS(12)=0.0	
03984*	332	1043	ALP=ALP+ALPS(12)	
03985*	333	1044	IPBNFS(12)=0	
03986*	334		IPBNFL=0.0	
03987*	335	1045	IF(ZCALC(111+1)-A1NCY)220,220,1050	44650
03988*	336	1050	CONTINUE	44660
03989*	337		IF(A1NCY- SCUR(115,1) 11060,1060,220	44670
03990*	338	1060	CONTINUE	
03991*	339		RETURN	
03992*	340	1070	IF(SLTFLG -4.0)1110,1110,1170	
03993*	341	1080	IF(SCUR(115,2)-A1NCY)1100,1070,1090	44710
03994*	342	1090	CONTINUE	44720
03995*	343		RETURN	
03996*	344	1100	RSLOTA=RFY+(RFY-RFX)*(SCUR(115,2)-A1NCX)/(A1NCY-A1NCX)	44740
03997*	345		SLTFLG=4.0	44750
03998*	346	1110	IF(SCUR(115,2) -A1NCY)1130,1120,1120	44760
03999*	347	1120	CONTINUE	44770
04000*	348		RETURN	
04001*	349	1130	A1NCHI=A1NCW	44790
04002*	350		A1NCW=SCUR(115,2)	44800
04003*	351		SLTFLG=5.0	44810
04004*	352	1140	DO 1150 I=111,111	44820
04005*	353		ISAV=1	
04006*	354		IF(A1NCW-ZCALC(1))1160,1150,1150	44830
04007*	355	1150	CONTINUE	44840
04008*	356	1160	P=PD(111)	44850
04009*	357		IS2=ISAV-1	
04010*	358		111=IS2	44870
04011*	359		11J=111	44880
04012*	360		TEMP=(A1NCW-A1NCX)/(A1NCY-A1NCX)	44920
04013*	361		GO TO 241	
04014*	362	1170	IF(KDUMP(3))1190,1190,1180	44940
04015*	363	1180	CONTINUE	44950
04016*	364		WRITE(6,900)SLTFLG,115,151,152,A1NCX,A1NCY,A1NCW,	5 44960
04017*			XCUR(115,1),SCUR(115,2),TSLOTF(115),TSLOTA(115),111,ZCALC(111)	44970
04018*	365	1190	CALL SLOTF(IE)	

SUBROUTINE SEC50B(IE)

C4019*	366	WGPOR=WGPORT+DELTA	*(SCUR(115-1,2)-SCUR(115-1,1))*3.14159*	44970
C4020*		X(RFH1**2.+RF**2.)/2.00		
C4021*	367	D0119112=1,NSCTRS		
C4022*	368	IS=12		
C4023*	369	CALL RDSUB(15)		
C4024*	370	IF(1CHN.EQ.5) RETURN		45020
C4025*	371	1191 RDZ(110,15)=RD		
C4026*	372	PRNT(111,11)=DWDTS(115-1)		
C4027*	373	GO TO 930		
C4028*	374	1200 SLTFLG=J.J		45060
C4029*	375	ALP=0.0		
C4030*	376	D0121412=1,NSCTRS		
C4031*	377	IF(1PBDFS(12).LT.1)GO TO 1213		
C4032*	378	A1NCH=A1NCHS		
C4033*	379	RF=RFS		
C4034*	380	A1NCH1=A1NCHS		
C4035*	381	IF(1FLSEC(12).EQ.0)ALPS(12)=0.0		
C4036*	382	1213 ALP=ALP+ALPS(12)		
C4037*	383	1214 1PBDFS(12)=0		
C4038*	384	1PBDFL=J		
C4039*	385	1215 A1NCH1=A1NCH		45070
C4040*	386	PRNT(111,10)=DWSLTA(115-1)+DWSLTF(115-1)		
C4041*	387	GO TO 240		45090
C4042*	388	1220 ALP=0.0		
C4043*	389	D0122412=1,NSCTRS		
C4044*	390	IF(1PBDFS(12).LT.1)GO TO 1223		
C4045*	391	A1NCH=A1NCHS		
C4046*	392	RF=RFS		
C4047*	393	A1NCH1=A1NCHS		
C4048*	394	IF(1FLSEC(12).EQ.0)ALPS(12)=0.0		
C4049*	395	1223 ALP=ALP+ALPS(12)		
C4050*	396	1224 1PBDFS(12)=0		
C4051*	397	1PBDFL=J		
C4052*	398	1225 IF(111-N1)220,1240,1240		
C4053*	399	1210 IF(1E 11250,1220,1250		
C4054*	400	1240 IC=-1		
C4055*	401	1250 CONTINUE		
C4056*	402	RETURN		45160
C4057*	403	END		

I N D E X

SUBROUTINE SEG(SUB(1E))

SYMBOL

REFERENCES

5	-	40	42*				
10	-	43	43	44*			
20	-	43	45*				
80	-	45	46	48*			
90	-	53	57*				
220	-	48	58*	335	335	337	390
240	-	61*	387				
241	-	64*	361				
242	-	90	90*				
250	-	100	101*				
260	-	102	102	103*			
270	-	100	100	108*			
280	-	102	108	108	109*		
290	-	97	108	112*			
292	-	122	125*				
294	-	126	128*				
295	-	123	124	127	130*		
300	-	130	131*				
310	-	130	130	143*			
315	-	143	143	144*			
320	-	143	144	145*			
330	-	144	144	157*			
331	-	157	159*				
334	-	160	163*				
335	-	164* _{HR}	165*				
336	-	162	168*				
337	-	158	159	197*			
350	-	202*					
360	-	205	206*				
370	-	205	205	208*			
380	-	208	209*				
390	-	208	208	211*			
400	-	207	210	212*			
410	-	142	156	214*			
450	-	215	216*				
460	-	217* _{HR}	218*				
470	-	215	215	219*			
500	-	220*					
510	-	225*					
520	-	228	229*				
530	-	228	228	231*			
820	-	224	213*				
830	-	235*					
840	-	236*					
870	-	237*					
900	-	241*					
910	-	242	242	243*			
920	-	242	245*				

922	-	234	246.		
923	-	73	104	233	260.
924	-	262	263.		
925	-	277	283.		
930	-	264	288.	373	
935	-	300	302.		
940	-	305	305	336.	
950	-	309	310.		
960	-	311	312.	364	
970	-	58	275	309	313.
980	-	313	314.		
990	-	316.	322	322	
1000	-	316	316	317.	
1010	-	316	319.		
1020	-	313	322.		
1030	-	322	323.		
1040	-	313	325.		
1043	-	327	332.		
1044	-	326	333.		
1045	-	335.			
1050	-	335	336.		
1060	-	337	337	338.	
1070	-	324	340.		
1080	-	321	324	341.	
1090	-	341	341	342.	
1100	-	341	344.		
1110	-	340	340	346.	
1120	-	346	346	347.	
1130	-	346	349.		
1140	-	352.			
1150	-	352	354	354	355.
1160	-	354	356.		
1170	-	340	362.		
1180	-	362	363.		
1190	-	362	362	365.	
1191	-	367	371.		
1200	-	363	374.		
1210	-	365	399.		
1213	-	377	382.		
1214	-	376	383.		
1215	-	385.			
1220	-	388.	399		
1223	-	390	395.		
1224	-	389	396.		
1225	-	398.			
1240	-	398	398	400.	
1250	-	399	399	401.	
3360	-	172	174.		
3372	-	176.	188		
3373	-	178	180.		

3374	=	185	189								
3376	=	196	199								
ABCTL	=	14C0	240	240							
ABND	=	5C0									
ABN	=	5C0									
ABS	=	129									
ABSLOT	=	26C0	50								
ACCLL	=	14C0									
AF	=	19C0	136	147	154	206	209	211	212	217WR	248
		266									
AFITLH	=	69	248	248	268						
AFHI	=	16C0	114								
AFRPS	=	28C0	88	89							
AFX	=	13C0	88	114	114	200	209	211	250	269	
AFATLH	=	75	253	253	269						
AFY	=	13C0	89	114	136	201	206	211	249	270	
AFYTLH	=	71	249	249	270						
AIBSUB	=	283									
AINC	=	12C0									
AINCMI	=	14C0	59	60	76	99	110	113	128	254	258
		261	282	333	349	380	385	393			
AINCMP	=	261									
AINCMS	=	2C0	282	330	380	393					
AINCIN	=	4C0	38	39	162						
AINCW	=	21C0	63	75	98	99	100	108	109	110	111
		121	128	130	150	189	197	199	204	217WR	255
		258	279	283	305	311WR	320	349	350	354	360
		364WR	378	385	391						
AINCnP	=	279									
AINCnS	=	2C0	280	328	378	391					
AINCA	=	17C0	38	98	98	111	111	113	113	121	121
		150	150	162	189	189	197	197	199	199	204
		264	217WR	311WR	319	319	344	344	360	360	364WR
AINCY	=	17C0	39	98	100	102	111	113	121	130	150
		189	197	199	204	217WR	311WR	316	319	335	337
		341	344	346	360	364WR					
AJPP	=	19C0									
AKG	=	6C0									
AKR	=	6C0									
AKRST	=	21C0									
AKSLOT	=	6C0									
AKU	=	6C0									
ALP	=	22C0	91	92	131	132	130	145	146	152	181AG
		162	183	184	189	190	193	197	198	217WR	226
		240	265	294	325	332	332	375	382	382	388
		395	395								
ALPBOX	=	184	189	189							
ALPBUY	=	163	189								
ALPHI	=	13C0	116	139	153	192	224	240	261	263	263
ALPHIS	=	3201	139	153	192	263					

I N D E X

SUBROUTINE SEGMENTS

PAGE 201

ALPPL	-	500	180								
ALPS	-	3201	42=	92=	116	132=	138=	146=	152=	182=	190=
		193=	198=	257	331=	332	381=	382	394=	395	
ALPSEC	-	2800	42	84	85						
ALPTLH	-	66=	257=	257	265						
ALPX	-	1800	84=	91	157	159	197	197	206	217WR	
ALPY	-	1800	85=	131	157	159	197	209	217WR		
ANACH	-	1400	208=	293							
ANAX1	-	231	256	256	256						
ANPH	-	2100									
ANW	-	2100									
ANWG	-	800									
ANIBU	-	1400									
ANLUPS	-	1400									
AND	-	1200									
AND1	-	400									
AP	-	2000	93=	94	133=	134	154=	155	212=	213	217WR
		241	253	255	258	266=	295	304			
APH1	-	1400	115=	241	247	253	254	258	267=	304	
APH1LM	-	68=	247=	247	267						
APORT	-	500	273	274							
APRTSC	-	500	41	86	87						
APT	-	3201	41=	94=	115	134=	155=	213=	246		
APTLH	-	67=	246=	246	266						
APX	-	1800	86=	93	200	217WR	273=				
APY	-	1800	87=	133	201	217WR	274=				
AT	-	2100									
ATAN	-	128									
BLK29	-	200									
BRNDUT	-	2000									
COMA	-	1400									
COMA10	-	2900									
COMQ	-	1500									
CUMK	-	1600									
COMM	-	1700									
CGMO	-	1800									
CUMJ	-	1900									
CONSIS	-	300									
CSTAK	-	800									
CSTR	-	800									
DELF	-	1100	226								
DELT	-	1400	227	239							
DELTA	-	2100	304	366							
DELTSS	-	900									
DELTST	-	900									
DELT10	-	900									
DELT2	-	1100	99=	110=	226	240	241	251	253	271=	276
		284=	304								
DELT5	-	276=	284								
DELT1	-	72=	251=	251	271						

I N D E X

SUBROUTINE SEGMENTS

PAGE 202

DIS	-	21CO									
DUMX1	-	3101	179=	181AG							
DUMX2	-	3101	180=	181AG							
DUMYP	-	13CO									
DNDUT	-	15CO	226=	227=	230=	230	231=	231	232	230=	238
		272=	297								
DNDTS	-	16CO	372								
DWSLTA	-	16CO	386								
DWSLTF	-	16CO	386								
DWTEH	-	65=	232=	232	239=	272					
GAMA	-	8CO	287	287	288						
GAMAG	-	8CO									
GNOT	-	3CO									
HCO	-	11CO									
I	-	122	123	123	124	124	166	161	162	170	179
		179	180	180	352	353	354				
12	-	40	41	41	42	42	54	54	73	74	78
		79	262	263	300	301	302	326	327	331	331
		332	333	367	368	376	377	381	381	382	383
		389	390	394	394	395	396				
ICHR	-	24CO	56	166=	221	285=	286	370			
IE	-	1AG	283AG	285	365AG	399	400=				
IFLAG	-	27CO									
IPLS	-	2CO	35=	140	151	194					
IPLSEC	-	3101	79=	140=	151=	194=	331	381	394		
III	-	20CO	48	59	60	61=	61	63	75	76	77
		90	105=	105	112	117	117	120	123	123	124
		124	126	128	128	129	129	171	173	173	173
		217WR	252	254	255	256	256	289	290	291	292
		293	294	295	296	297	298	299	301	301	301
		302	302	302	308	311WR	311WR	335	352	356	358=
		359	364WR	364WR	372	386	398				
11J	-	20CO	62=	62	106=	106	223	359=	371		
11S	-	20CO	49=	102	108	109	305	311WR	311WR	311WR	311WR
		311WR	316	319	337	341	344	346	350	364WR	364WR
		364WR	364WR	364WR	366	366	372	386	386		
1J	-	172	173	173							
INPUT1	-	4CO									
INPUT4	-	5CO									
INPUTE	-	6CO									
INPUTF	-	7CO									
INPUTG	-	8CO									
INPUTM	-	9CO									
INPUTO	-	10CO									
INPUTU	-	11CO									
IPBNFL	-	34=	137AG	141	148AG	149	191AG	195	277	334=	384=
		397=									
IPBNFS	-	3101	78=	141=	144=	195=	327	333=	377	383=	390
		396=									
IS	-	54=	55AG	57	74=	77	8J	81	82	83	84

PHAX	=	26CO									
PHIN	=	26CO									
PO	=	26CO	287	289							
PON	=	21CO									
PRESS	=	BCO									
PRNT	=	14CO	112	289	290	291	292	293	294	295	296
		297	298	299	301	301	302	302	372	386	
R	=	8CO									
RADIAN	=	3CO									
RD	=	15CO	57	223	226	371					
RH1	=	18CO	117	226							
RBSLOT	=	23CO									
RBSLTA	=	16CO									
RBSLTF	=	16CO									
RBSUB	=	65	220	369							
RHZ	=	15CO	57	117	223	301	371				
RF	=	12CO	95	121	128	135	150	154	199	212	291
		278	329	366	379	392					
RFH1	=	18CO	118	128	241	366					
RFI	=	4CO	82	83	95						
RFS	=	2CO	270	329	379	392					
RFX	=	17CO	82	118	118	121	150	150	199	199	
		200	319	319	344	344					
RFY	=	1CO	83	118	121	135	150	199	201	319	344
RI	=	4CO									
RII	=	12CO									
RPL	=	5CO	179								
RSLOTA	=	23CO	344								
RSLOTF	=	23CO	319								
SCUR	=	26CO	102	138	109	123	123	124	124	173	173
		305	311WR	311WR	316	319	337	341	344	346	350
		364WR	364WR	366	366						
SECN	=	33	84	85	86	87	88	89	92	94	115
		116	132	134	138	139	146	152	153	155	182
		195	192	193	198	213	232	240	241	247	248
		249	250	251	253	254	255	259	301	302	
SECTOR	=	35CO									
SEGSUB	=	1EY									
SLOT	=	365									
SLTFLG	=	23CO	58	97	224	233	234	264	275	303	307
		311WR	313	315	320	322	324	340	345	351	364WR
		374									
SQRT	=	288									
STDYST	=	9CO	46								
STFLAG	=	9CO	227	239							
T	=	21CO	287	288	288	291					
TABU	=	6CO									
TAB1	=	6CO									
TAU	=	19CO	77	96	203	206	209				
TAUOH	=	176	181AG								

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		173	254	255	311WR	335	354	364WR			

04108.	38	IF(DTINT)180,30,180	
04109.	39	30 DTINT=DT	
04110.	40	AN2=PI*AN2/180.	71060
04111.	41	73 A1=PI*DT**2./4.	71070
04112.	42	80 ALAMH=.5+.5*COS(AN2)	71080
04113.	43	AEE=PI*DE**2/4.	71090
04114.	44	TIMEA=Y.9999999E35	71110
04115.	45	CODET=0.	71120
04116.	46	ANIB0=0.	71130
04117.	47	VIS=0.	71150
04118.	48	AIT=0.	71170
04119.	49	SPHOT=0.	71180
04120.	50	SPONDT=0.	71190
04121.	51	SDOUTN=0.0	71200
04122.	52	FX=0.	71210
04123.	53	PHX=0.	71220
04124.	54	PONA=0.	71230
04125.	55	TA=DELF*VF	71240
04126.	56	WDOTA=0.0	71250
04127.	57	PHMAX=0.	71270
04128.	58	CLDPS=0.	71290
04129.	59	WD=0.	71300
04130.	60	DEED=0.	71310
04131.	61	PHOLD=0.	71320
04132.	62	VFINT=VF	71330
04133.	63	VFPP=VCH+VCN	
04134.	64	REF=RF1(1,1)	
04135.	65	AINCX=AINCIN(1)	
04136.	66	DOICCI=2,KPLANE	
04137.	67	AINC=AINCIN(1)	
04138.	68	RF=RF1(1,1)	
04139.	69	VFPP=VFPP+(AINC-AINCX)*((RF*RF)*RF+RF**2)*HCO*3.14159/(3.*HCO)	
04140.	70	IF(AINC-HCO199,101,99	
04141.	71	99 RFX=RF	
04142.	72	AINCX=AINC	
04143.	73	100 CONTINUE	
04144.	74	101 CONTINUE	
04145.	75	180 IF(ISTFLAG.LE.0.0 .OR. TIME*GE.DELT) GO TO 196	
04146.	76	195 IF(PH-(0.5*PH1))600,600,200	
04147.	77	196 IF(PH-PA)600,600,200	
04148.	78	200 DELLP=PH-PHOLD	71780
04149.	79	PHOLD=PH	71790
04150.	80	CEMPC=CSTAR	71800
04151.	81	TSS=SQRT(2.*GAMA*TO*R*GNUT/(GAMA-1.))	71810
04152.	82	GP1=GAMA+1.	71820
04153.	83	GN1=GP1-2.	71830
04154.	84	ANBSS=SQRT(GAMA*GNUT*(2./GP1)**((GP1/GM1)/(TO*R)))	71840
04155.	85	CFC=SQRT(2.*GAMA**2*(2./GP1)**((GP1/GM1)/GM1))	71850
04156.	86	ANBSU=SQRT(2.*GAMA*GNUT/(TO*R*GM1))	71860
04157.	87	EXP1=GAMA/GM1	71870

G4158*	88	PSOP0=(2./GP1)**EXP1	71880
G4159*	89	PON=P*(TO/T1)**(GAMA/(GAMA-1.))	
G4160*	90	CLOPS=CLOPS+1.	71900
G4161*	91	IF(ISTFLAG.GE.0.0 .AND. PON.LE.(0.5*PH1) .AND. TIME	
G4162*		1 .LT. DELT) GO TO 57J	
G4163*	92	IF (PON-PA)570,570,210	71910
G4164*	93	210 AMBSS=GN01/CSTAR	71920
G4165*	94	220 DIS=AMBSS*ANN*AT*PON	71930
G4166*	95	IF (PON*PSUP0-PA)240,230,230	71940
G4167*	96	230 CODET=0.0	
G4168*	97	GO TO 330	71970
G4169*	98	240 S015=ANN*(UN*AMBSS*AEE*(PA/PON)**1./GAMA)*SQRT(1.-(PA/PON)**(GAM	71980
G4170*		XA-1.)/GAMA))	71990
G4171*	99	IF (S015-DIS)250,230,230	72000
G4172*	100	250 DIS=S015	72010
G4173*	101	CODET=1.	72030
G4174*	102	GO TO 330	72040
G4175*	103	260 IF (PMAX/100000.-AUS(PHIN-PMAX))370,370,270	72050
G4176*	104	270 IF (AMPH-0.9)590,280,280	72060
G4177*	105	280 ATMAX=CEMPC*WDOT/(GN01*PON)	72070
G4178*	106	WRITE(6,290)AT,ATMAX	72080
G4179*	107	290 FORMAT(4HAT=,1PE15.7,63H.THRUAT AREA GREATER THAN MAXIMUM ALLOWAB	72090
G4180*		XLE THRUAT AREA. ATMAX=,1PE15.7)	72100
G4181*	108	WRITE(6,300)WDOT,DIS,ANLOPS,PON,PA,PMIN,PMAX,AMPH	72110
G4182*	109	300 FORMAT(6HWDOT=1PE14.7,6H DIS=1PE14.7,9H ANLOPS=1PE14.7,	72120
G4183*		X6H PON=1PE14.7,5H PA=1PE14.7/6H PMIN=1PE14.7,7H PMAX=1PE14.7,	72130
G4184*		X7H AMPH=1PE14.7)	72140
G4185*	110	ICHL=5	72150
G4186*	111	RETURN	72160
G4187*	112	310 CONTINUE	
G4188*	113	IF (ANLOPS-20.)370,370,320	72170
G4189*	114	320 IF(ISTFLAG.GE.0.0 .AND. TIME.LT.DELT) GO TO 325	
G4190*	115	322 IF (0.01-AUS(PON-PA))200,600,600	
G4191*	116	325 IF (0.01-AUS(PON-0.5*PH1))260,600,600	
G4192*	117	330 IF (TIME)350,340,350	72190
G4193*	118	340 TEMPI=WDOT/1000.	72200
G4194*	119	GO TO 360	72210
G4195*	120	350 TEMPI=(VFINT-VF)*DELT/(TIME-1000.)	72220
G4196*	121	360 IF (ABS((WDOT-DIS)/DIS)-CRN)590,590,310	72230
G4197*	122	370 IF(ISTFLAG)410,410,380	72240
G4198*	123	380 CONTINUE	72250
G4199*	124	IF (RPH-1)410,410,390	72260
G4200*	125	390 CONTINUE	72270
G4201*	126	IF (TIME-TIMEPHINPH)400,400,410	72280
G4202*	127	400 CONTINUE	72290
G4203*	128	CALL CONV	72300
G4204*	129	GO TO 560	72310
G4205*	130	410 IF (CLOPS-1.)420,430,420	72320
G4206*	131	420 WD=(WDOT-WDB)/DELLP	72330
G4207*	132	DEEL=(DIS-DISB)/DELLP	72340

04208*	133	430	IF (DEED-WD) 450, 440, 450	72350
04209*	134	440	DELLP=PH*(WDOT/DIS)*.14-1.)	72360
04210*	135		GO TO 460	72370
04211*	136	450	DELLP=(WDOT-DIS)/(DEED-WD)	72380
04212*	137	460	WDB=WDOT	72390
04213*	138		DIS=DIS	72400
04214*	139		IF (WDOT-DIS) 480, 480, 470	72410
04215*	140	470	PHIN=PH	72420
04216*	141		GO TO 490	72430
04217*	142	480	PNAX=PH	72440
04218*	143	490	TEMP6=PH	72450
04219*	144		PH=PH+DELLP	72460
04220*	145		IF (PH-PHIN) 500, 500, 530	72470
04221*	146	500	IF (PHIN) 520, 510, 520	72480
04222*	147	510	PH = 5.	72490
04223*	148		GO TO 530	72500
04224*	149	520	PH = 2.*PHIN	72510
04225*	150	530	IF (PH-PNAX) 550, 540, 540	72520
04226*	151	540	PH=(PNAX-PHIN)*0.9+PHIN	72530
04227*	152	550	DELLP=PH-TEMP6	72540
04228*	153	560	IL=1	72550
04229*	154		GO TO 950	72560
04230*	155	570	PHIN=PH	72570
04231*	156		TEMP6=PH	72580
04232*	157		DELLP=PA/3.	72590
04233*	158		PH=PH+DELLP	72600
04234*	159		IF (PH-PNAX) 560, 580, 580	72610
04235*	160	580	PH=(PH-DELLP)*0.1+0.9*PNAX	72620
04236*	161		DELLP=PH-TEMP6	72630
04237*	162		GO TO 580	72640
04238*	163	590	PHIN=PA	72650
04239*	164		CLOFS=L.	72660
04240*	165		PNAX=9.9999999E35	72670
04241*	166		GO TO 610	72680
04242*	167	600	PH=PA	72690
04243*	168		PON=PA	72700
04244*	169		IF (STFLAG.GT.0.0) PH=0.5*PHI	
04245*	170		IF (STFLAG.GT.0.0) PON=0.5*PHI	
04246*	171		ANPH=L.	72710
04247*	172		F=0.	72720
04248*	173		GO TO 800	72730
04249*	174	610	AEC=PI*DE*.2/4.	72740
04250*	175		IF (CODET) 790, 620, 790	72750
04251*	176	620	EPG=AEC/AT	72760
04252*	177		IF (PA) 630, 660, 630	72770
04253*	178	630	LPS=L.609*(PON/PA)*.0.814	72780
04254*	179		IF (LPS-1.1640, 640, 650	72790
04255*	180	640	EP1=1.	72800
04256*	181		PLPO=P50PO	72810
04257*	182		GO TO 780	72820

04258*	183	650	IF(EPG-EP5)660,660,670	72830
04259*	184	660	EP1=EPG	72840
04260*	185		GO TO 680	72850
04261*	186	670	EP1=EP5	72860
04262*	187	680	GH1=GANA-1.	
04263*	188		GP1=GANA+1.	72890
04264*	189	690	TEMP1=((GH1/GP1)**.5*(2./GP1)**(1./GH1))/EP1	72900
04265*	190		PLP01=.01	72910
04266*	191		IFLAG=1	72920
04267*	192		ITER=0	72930
04268*	193		GO TO 710	72940
04269*	194	700	PEP01=.002	72950
04270*	195		IFLAG=2	72960
04271*	196	710	PEPOX2=PEPOX1	72970
04272*	197		PEPOX1=PEPO1	72980
04273*	198		PEPOY=(TEMP1/SQRT(1.0-(PEPO1)**(GH1/GANA)))*GAMA	72990
04274*	199		PEPOY2=PEPOY1	73000
04275*	200		PEPOY1=PEPOY	73010
04276*	201		E2=E1	73020
04277*	202		E1=(PEPOX1-PEPOY1)/PEPOX1	73030
04278*	203		ITER=ITER+1	73040
04279*	204		IF(1-IFLAG-1)/00,700,720	73050
04280*	205	720	CONTINUE	73060
04281*	206		IF(ITER-30)/750,750,730	73070
04282*	207	730	CONTINUE	73080
04283*	208		WRITE(6,740)PEPOX1,PEPOX2,PEPOY1,PEPOY2,E1,E2	73090
04284*	209	740	FORMAT(1X,Y9H ITERATION FOR NOZZLE PRESSURE RATIO IN SUBROUTINE SET	73100
04285*			XPH HAS FAILED. EXECUTION HAS BEEN TERMINATED./1X,7HPEPOX1=1PE11.4	73110
04286*			X,2X,7HPEPOX2=1PE11.4,2X,7HPEPOY1=1PE11.4,2X,7HPEPOY2=1PE11.4,2X,3H	73120
04287*			XE1=1PE11.4,2X,3HE2=1PE11.4)	73130
04288*	210		ICNN=5	73140
04289*	211		RETURN	73150
04290*	212	750	IF(ABS(E1)-0.001)/770,770,760	73160
04291*	213	760	CONTINUE	73170
04292*	214		PEP01=(E2+PEPOX1-E1+PEPOX2)/(E2-E1)	73180
04293*	215		PEP01=ANIN1(PEP01,1.0)	73190
04294*	216		PLP01=ANAX1(PLP01,1.E-6)	73200
04295*	217		GO TO 710	73210
04296*	218	770	PEPO=PEP01	73220
04297*	219		CFO=CFC*SQRT(1.-PLPO**((GH1/GANA)))	73230
04298*	220	780	CFUL=(CFO*ALAMN+PLPO*EP1)*CH	73240
04299*	221		F=(CFUL*PON*AT-PA*EP1*AT)*ANN	73250
04300*	222		GO TO 800	73260
04301*	223	790	VL=TSS*SQRT(1.-(PA/PON)**((GH1/GANA)))	73270
04302*	224		F=VL*ALAMN*ADOT*CH*ANN/GNOT	73280
04303*	225	800	IF(TIME,GT,0.0) GO TO 809	
04304*	226		WF=VF*DELF+AFCUR	
04305*	227		WFI=WF	
04306*	228		SUMWFZ=0.0	
04307*	229		TIMEZZ=0.0	

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04308*      C
04309*      C      PROPELLANT MASS CORRELATION
04310*      C
04311*      230      IF(WFACT.EQ.0.0) GO TO 809
04312*      231      DELLWF = ABS(WF-WFACT)
04313*      232      IF((DELLWF/WFACT).GT.0.05) GO TO 801
04314*      233      GO TO 803
04315*      234      801 WRITE(6,802) WFACT,WF
04316*      235      802 FORMAT('CASE TERMINATED, CALCULATED TOTAL PROPELLANT MASS UNREASON-
04317*      236      1ABLE-CHECK INPUT DATA')/0INPUT MASS =',F11.2,5X,'CALCULATED MASS
04318*      237      2=F11.2)
04319*      238      STOP
04320*      239      803 IF((DELLWF/WFACT).LT.WFTOL) GO TO 809
04321*      240      IF(RHOTOL.GT.0.0) GO TO 805
04322*      241      WRITE(6,804) WFACT,WF
04323*      242      804 FORMAT('PROPELLANT MASS DIFFERENCE IS SIGNIFICANT-ADJUST WITH DEN-
04324*      243      1SITY AND/OR DIMENSION INPUT DATA-CASE TERMINATED')/0INPUT MASS =',
04325*      244      2F11.2,5X,'CALCULATED MASS =',F11.2)
04326*      245      STOP
04327*      246      805 DELFX = DELLF
04328*      247      DELLF = DELFX * WFACT/WF
04329*      248      IF(ABS((DELLF-DELLFX)/DELLFX).LT.RHOTOL) GO TO 807
04330*      249      WRITE(6,806) WFACT,WF
04331*      250      806 FORMAT('PROPELLANT MASS DIFFERENCE IS SIGNIFICANT, HOWEVER, ADJUST-
04332*      251      1MENT IN DENSITY EXCEEDS RHOTOL')/ READJUST WITH DENSITY AND/OR DI-
04333*      252      2MENSION INPUT DATA - CASE TERMINATED')/0INPUT MASS =',F11.2,5X,
04334*      253      3'CALCULATED MASS =',F11.2)
04335*      254      STOP
04336*      255      807 WRITE(6,808) DELLF
04337*      256      808 FORMAT('INPUT DENSITY WAS ADJUSTED, ADJUSTED DENSITY =',F9.6)
04338*      257      WF=DELF*VF+WFCOR
04339*      258      WFI=WF
04340*      C      MASS GENERATED FROM GRAIN STORED IN
04341*      C      PRNT(1,10), THEREFORE INTEGRATE PRNT(1,10)
04342*      259      809 IF(TIME.EQ.TIMEZZ) GO TO 820
04343*      260      SUMWF=0.0
04344*      261      NNAK=N1+1
04345*      262      IF(NSUBMG.GT.0) NNAK=N1+2
04346*      263      DO 815 I=1,NNAK
04347*      C      SKIP PRNT(1,10) FOR MASS ADDITION REGIONS THAT ARE BURNED OUT SO
04348*      C      DADOT INTEGRATION IS CORRECT
04349*      264      IF(I.EQ.1) GO TO 813
04350*      265      IF(I.EQ.NNAK) GO TO 813
04351*      266      IF(I.EQ.(NNAK-1).OR.1.EQ.N1) GO TO 813
04352*      267      DO 812 J=1,NSLOT
04353*      268      IF(ZCALC(I).LE.SCURL(J,2).AND.ZCALC(I+1).GT.SCURL(J,2)) GO TO 813
04354*      269      IF(SCURL(J,1).LT.ZCALC(I+1).AND.SCURL(J,2).GT.ZCALC(I)) GO TO 813
04355*      270      812 CONTINUE
04356*      271      813 SUMWF=SUMWF+PRNT(1,10)
04357*      272      815 CONTINUE

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04358.	266	WF=WF-(SUMWF+SUMWZ)*((TIME-TIMEZZ)/2.0	
04359.	267	IF(WF.LT=0.0) WF=0.0	
04360.	268	TIMEZZ=TIME	
04361.	269	SUMWFZ=SUMWF	
04362.	270	820 TEMPI=TX-WF	
04363.	271	830 IF(PHMAX-PHOLD)840,840,850	73350
04364.	272	840 PHMAX=PHOLD	73360
04365.	273	850 IF(TIME.NE=0.0) GO TO 852	
04366.	274	AIT=0.0	
04367.	275	SPHDT=0.0	
04368.	276	SPHDT=L*0	
04369.	277	SWDOTN=0.0	
04370.	278	GO TO 853	
04371.	279	852 SPHDT=SPHDT+(PHOLD+PHX)*DELT/2.	
04372.	280	SPHDT=SPHDT+(PON+POHX)*DELT/2.	73380
04373.	281	SWDOTN=SWDOTN+(WDOTX+WDOT)*DELT/2.	73390
04374.	282	AIT=AIT+(1+FX)*DELT/2.	73400
04375.	283	853 FX=1	
04376.	284	PONX=PON	73420
04377.	285	PHX=PHOLD	73430
04378.	286	IF(TIME.L1.DELT+440,STFLAG=0T,0.0)PHX=0.5*PHI	
04379.	287	TX=WF	73440
04380.	288	WDOTX=WDOT	73450
04381.	289	WGTOT=VGPURT+(VCH-VFH)*PH/(12.*R*T)+(VCH-VFH)*P/(12.*R*T)	73470
04382.	290	IF(TIME)870,880,870	73480
04383.	291	870 IF(TIME-TIMEW)950,880,950	73490
04384.	292	880 VFWEB=VF	
04385.	293	950 IF(KDUMP(J))980,980,980	73650
04386.	294	960 CONTINUE	73660
04387.	295	WRITE(6,970)PHOLD,WDOT,WDB,DELLP,PHIN,WD,CLOPS,	P 73670
04388.		XON,D15,D150,DEED,PMAX,PH,ANLOPS	73680
04389.	296	970 FORMAT(//1H,36HFORE HEAD PRESSURE ITERATION SUMMARY//7H PHOLD=IP	73690
04390.		XE10,3,2X,5HWDOT=1PE10,3,3X,4HWDN=1PE10,3,4X,6HDELLP=1PE10,3,2X,5H	73700
04391.		XMIN=1PE10,3,3X,3HWD=1PE10,3,5X,6HCLOPS=1PE10,3/5H PON=1PE10,3,4X,4	73710
04392.		XHD15=1PE10,3,4X,5HDISB=1PE10,3,3X,5HDEED=1PE10,3,3X,5HPMAX=1PE10,3	73720
04393.		X,3X,3HPH=1PE10,3,5X,7HANLOPS=1PE10,3)	73730
04394.	297	980 RETURN	73740
04395.	298	END	

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240	95 98
250	99 100
260	103 115
270	103 104
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290	106WK 107
300	108WK 109
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390	124 125
400	126 126 127
410	122 122 124 124 126 130
420	130 130 131
430	134 133
440	133 134
450	133 133 136
460	135 137
470	139 140
480	139 139 142
490	141 143
500	145 145 146
510	146 147
520	146 146 149
530	145 148 150
540	150 150 151

I N D E X

SUBROUTINE SETPH(IE)

550	-	150	152*						
560	-	129	153*	159	162				
570	-	91	92	92	155*				
580	-	159	159	160*					
590	-	104	121	121	163*				
600	-	76	76	77	77	115	115	116	116
610	-	166	174*						167*
620	-	175	176*						
630	-	177	177	178*					
640	-	179	179	180*					
650	-	179	183*						
660	-	177	183	184*					
670	-	183	186*						
680	-	185	187*						
690	-	189*							
700	-	194*	204	204					
710	-	193	196*	217					
720	-	204	205*						
730	-	206	207*						
740	-	208AK	209*						
750	-	206	206	212*					
760	-	212	213*						
770	-	212	212	218*					
780	-	182	220*						
790	-	175	175	223*					
800	-	173	222	225*					
801	-	232	234*						
802	-	234AK	23*						
803	-	233	237*						
804	-	239AK	240*						
805	-	238	242*						
806	-	245AK	246*						
807	-	244	248*						
808	-	248AK	249*						
809	-	225	230	237	252*				
812	-	260	263*						
813	-	257	258	259	261	264*			
815	-	256	262	265*					
820	-	252	270*						
830	-	271*							
840	-	271	271	272*					
850	-	271	273*						
852	-	273	279*						
853	-	278	283*						
870	-	290	290	291*					
880	-	290	291	292*					
950	-	33	154	291	291	293*			
960	-	293	294*						
970	-	295AK	296*						
980	-	293	293	297*					

I N D E X

SUBROUTINE SETPH(IE)

AAN	=	24CO					
ABCYL	=	17CO					
ABS	=	103	115	116	121	212	231 244
ABTOT	=	24CO					
ACCEL	=	17CO					
ACG	=	14CO					
ACK	=	15CO					
AEE	=	21CO	37=	43=	98	174=	176
AHH	=	18CO					
AINC	=	13CO	67=	69	70	72	
AINCHI	=	17CO					
AINCII	=	4CO	65	67			
AINCA	=	23CO					
AINCA	=	2CO	65=	69	72=		
AINCY	=	2CO					
AIT	=	24CO	48=	274=	282=	282	
AJBHLD	=	18CO					
AJBNUZ	=	18CO					
AJPHLD	=	18CO					
AJPNUZ	=	18CO					
AKNST	=	23CO					
ALAMN	=	42=	220	224			
AMACH	=	17CO					
AMAXI	=	216					
AMBS	=	84=	93=	94			
AMBSU	=	66=	98				
AMINI	=	215					
AMPN	=	23CO	104	108WR	171=		
AMA	=	23CO					
AMWG	=	6CO					
AN2	=	7CO	40=	40	42		
ANIBU	=	17CO	46=				
ANK	=	14CO					
ANLOPS	=	17CO	108WR	113	295WR		
ANN	=	7CO	94	98	221	224	
ANODM	=	13CO					
ANDI	=	4CO					
AP	=	27CO					
APHI	=	17CO					
AT	=	23CO	41=	94	106WR	176	221 221
ATHAX	=	105=	106WR				
BLKJJ3	=	2CO					
BRNDUT	=	22CO					
CEMPC	=	80=	105				
CFC	=	85=	219				
CFO	=	25CO	219=	220			
CFOL	=	25CO	220=	221			
CLOPS	=	25CO	58=	90=	90	130	164= 295WR
CM	=	7CO	220	224			
CODET	=	45=	96=	101=	175		

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SUBROUTINE SE1PH(IE)

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I N D E X

SUBROUTINE SET(PH11E)

PAGE 218

INHA	=	14C0										
NSUBMG	=	31C0										
I	=	66	67	68	256	257	258	259	259	261	261	
		262	262	264								
ICHN	=	26C0	110	210								
IE	=	1AG	33	34	153							
IFLAG	=	30C0	191	195	204							
III	=	22C0										
IIJ	=	22C0										
II5	=	22C0										
INPUTJ	=	4C0										
INPUTF	=	5C0										
INPUTG	=	6C0										
INPUTI	=	7C0										
INPUTH	=	8C0										
INPUTO	=	9C0										
INPUTQ	=	10C0										
INPUTR	=	11C0										
INPUTU	=	12C0										
IS1	=	22C0										
IS2	=	22C0										
ITER	=	192	203	203	206							
J	=	460	261	261	262	262						
KDUMP	=	12C0	293									
KPLANE	=	9C0	66									
NCSCOE	=	6C0										
NCSTH	=	6C0										
NEND	=	31C0										
NI	=	22C0	254	255	259							
NMAR	=	254	255	256	258	259						
MPH	=	5C0	124	126								
NSLOT	=	22C0	260									
NSUBMG	=	31C0	255									
NTABE	=	22C0										
P	=	23C0	89	289								
PA	=	12C0	77	92	95	98	98	108WR	115	157	163	
		167	168	177	178	221	223					
PAHMAA	=	30C0										
PAHMAB	=	31C0										
PAHMO	=	22C0										
PAHMF	=	23C0										
PAHMG	=	24C0										
PAHMK	=	25C0										
PAHMS	=	26C0										
PAHMY	=	27C0										
PAHNN	=	28C0										
PAHMA	=	29C0										
PCTAB	=	5C0										
PD	=	19C0										
PEPO	=	25C0	181	218	219	220						

I N D E X

SUBROUTINE SETPH(IE)

PEPO1	-	21CO	190=	194=	197	198	214=	215=	215	216=	216
PEPOX1	-	32DA	196	197=	202	202	208WR	214			
PEPOX2	-	196=	208WR	214							
PEPOY	-	198=	200	218							
PEPOT1	-	32DA	199	200=	202	208WR					
PEPOT2	-	199=	208WR								
PH	-	23CO	76	77	78	79	134	140	142	143	144=
		144	145	147=	149=	150	151=	152	155	156	158=
		158	159	160=	160	161	167=	169=	289	295WR	
PHI	-	12CO	76	91	116	169	170	286			
PHMAX	-	57=	271	272=							
PHOLD	-	61=	78	79=	271	272	279	285	295WR		
PHST	-	5CO									
PHX	-	53=	279	285=	286=						
PI	-	3CO	37	40	41	43	174				
PMAX	-	22CO	103	103	108WR	142=	150	151	159	160	165=
		295WR									
PMIN	-	22CO	103	108WR	140=	145	146	149	151	151	155=
		163=	295WR								
PON	-	23CO	89=	91	92	94	95	98	98	98	105
		108WR	115	116	168=	170=	178	221	223	280	284
		295WR									
PONX	-	54=	280	284=							
PRESS	-	6CO									
PRNT	-	17CO	264								
PSOPU	-	88=	95	181							
R	-	6CO	81	84	86	289	289				
RADIAN	-	3CO									
RB	-	19CO									
RBZ	-	19CO									
RF	-	13CO	68=	69	69	71					
RF1	-	4CO	64	68							
RFX	-	20CO	64=	69	69	71=					
RFY	-	20CO									
RH1	-	14CO									
RHJUL	-	11CO	238	244							
RI	-	4CO									
RIDM	-	13CO									
RNI	-	15CO									
SCUR	-	22CO	261	261	262	262					
SDIS	-	98=	99	100							
SETPH	-	1EY									
SPHDT	-	24CO	49=	275=	279=	279					
SPONDT	-	24CO	50=	276=	280=	280					
SQRT	-	81	84	85	86	98	198	219	223		
STOYST	-	8CO									
STFLAG	-	8CO	75	91	114	122	169	170	286		
SUMAF	-	253=	264=	264	266	269					
SUMAFZ	-	2CO	228=	266	269=						
SNDOTN	-	25CO	51=	277=	281=	281					

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I N D E X

SUBROUTINE SETPH(IE)

PAGE 221

MSOT	-	2500	289				
WORKA	-	1300					
WORKNH	-	1400					
WORKRN	-	1500					
ADH	-	1800					
ADN	-	1800					
ZCALC	-	1700	261	261	262	262	

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04376*	1	SUBROUTINE SLOT(IE)	97770
04377*		CC	98040
04378*	C	SUBROUTINE SLOT DETERMINES THE GAS PROPERTIES AT THE DISCHARGE	98060
04379*	C	SECTION OF A SLOT BETWEEN GRAIN SEGMENTS FOR THE NON-STEADY FLOW	98070
04400*	C	OF THE INTERNAL BALLISTICS (SECTION 4.1.2.2).	98080
04401*		CC	98100
04402*	2	COMMON/CONST/SHOT,PI,RADIAN	
04403*	3	COMMON/INPUTG/CSTAR,GAMA,R,NCSTR,PRESS(20),CSTR(20),GAMAG(20),	
04404*		AMYG(20),TCOMB(20),NCSCUL	
04405*	4	COMMON/INPUTM/STFLAG,STOYST,DELTSI,DELTS,DELTI0	
04406*	5	COMMON/INPUTT/SB(18),SLTDNR(18),SA(18)	
04407*	6	COMMON/INPUTU/DELF,PA,PHI,HCO,DELZ,KDUMP(72)	
04408*	7	COMMON/WORKA/AINC,AHO,RF,RI	
04409*	8	COMMON/COMA/DELT,APHI,WDOTI,ANIBU,TIMEW,UT,ANLUPS,ACCEL,	
04410*		AUCYL,PRHI(101,15),AICH1,AMACH,ZCALC(101)	
04411*	9	COMMON/COMG/TAUZ(101,8),RBZ(101,8),PD(101),TAUWDP(101,8),RB,VF,	
04412*		DDDT,VP	
04413*	10	COMMON/COMJ/ABSLTA(18),ABSLTF(18),APA(18),APF(18),PSA(18),	
04414*		PSF(18),POA(18),POF(18),TSA(18),TSF(18),UA(18),	
04415*		UF(18),WSLOT(18),WSLOTI(18)	
04416*	11	COMMON/COMK/DWSLTA(18),DWSLTF(18),DWDTS(18),AFHI,RBSLTA(18),	
04417*		RBSLTF(18),TSLOTA(18),TSLOTF(18)	
04418*	12	COMMON/COMO/RFHI,KBHI,ALPX,ALPY,APX,APY	
04419*	13	COMMON/COMI/TAU,XBARTH,AFI,APP	
04420*	14	COMMON/PARMZ/AP,PHIN,PHAX,WDOT,111,110,WDOTD,NSLOT,NTABE,TOFLAG,	
04421*		BRNDOT,115,151,152,PH,SCUR(18,2)	
04422*	15	COMMON/PARME/PH,TIME,AINCW,T,P,DELTA,U,PON,DIS,AMPH,AT,AMW,AKRST	
04423*	16	COMMON/PARNR/RBSLOT,KSLOTA,KSLOTF,SLTFLG	
04424*	17	COMMON/PARMS/ICNN	
04425*	18	COMMON/PARNY/PSAPR(18),PSFPR(18)	
04426*	19	COMMON/PARMZ/ABSLUT,PO	
04427*	20	COMMON/PARMAA/TO,IFLAG	
04428*	21	DATA TA1,TI1,TE1,PA1,PDY1,LE1/6*0.07	98020
04429*	22	DDPS=0.0	98130
04430*	23	IF((STFLAG.LE.0.0).OR.(TIME.LT.DELT))WDOT=0.0	
04431*	24	IF(STFLAG)10,10,5	
04432*	25	5 IF(TIME)6,0,30	
04433*	26	6 PD(151)=0.5*PHI	
04434*	27	PD(152)=0.5*PHI	
04435*	28	PSA(115)=0.5*PHI	
04436*	29	PSF(115)=0.5*PHI	
04437*	30	POF(115)=0.5*PHI	
04438*	31	POA(115)=0.5*PHI	
04439*	32	GO TO 25	
04440*	33	10 IF(PD(151)-PA)20,20,30	98140
04441*	34	20 PD(151)=PA	
04442*	35	PD(152)=PA	98170
04443*	36	PSA(115)=PA	98180
04444*	37	PSF(115)=PA	98190
04445*	38	POF(115)=PA	98200

04446*	39		POA(115)=PA	
04447*	40	25	APF(115)=PI*RFHI**2	98210
04448*	41		AUSLTF(115)=AFHI	
04449*	42		WDOTSD=0.0	98230
04450*	43		TS=TO	
04451*	44		UTMP=0.0	
04452*	45		WDOTD=0.0	
04453*	46		WDOTSI=0.0	
04454*	47		WSLOT(115)=0.0	
04455*	48		GO TO 410	
04456*	49	30	P=PD(151)	98250
04457*	50		ISRA=0	98260
04458*	51		CALL RUSUB(1SR)	
04459*	52		WDOTD=WDOT	
04460*	53		IF(SLTBRN(115).EQ.1..OR.SLTBRN(115).EQ.3.)KWSLOT=0.0	98280
04461*	54		RWSLTF(115)=RWSLOT	
04462*	55		DWSLTF(115)=RWSLOT*DELF*AFHI	98290
04463*	56		WDOTSI=WDOTD+DWSLTF(115)	98300
04464*	57		WSLOT(115)=WDOTSI	98310
04465*	58		POF(115)=PO	98320
04466*	59		PSF(115)=PD(151)	98330
04467*	60		PBAR=PSF(115)	98340
04468*	61		UF(115)=WDOTSI*R/T/(PI*RFHI**2..PD(151))	
04469*	62		AMACH=ABS(U/SQRT(GNOT*GAMA*R*T))	98350
04470*	63		VDOT=(TSLOTF(115)*(RFHI**2..RWSLOT**2..)+TSLOTA(115)*	
04471*			X(RF**2..RWSLOTA**2..)*PI/12..DELT)	98370
04472*	64		Y=(SCUR(115,2)-SCUR(115,1))*(RF**2..RFHI**2..)*PI/2..	98380
04473*	65		APF(115)=PI*RFHI**2	
04474*	66		AUSLTF(115)=AFHI	
04475*	67		IF(SLTBRN(115).EQ.1..OR.SLTBRN(115).EQ.3.)ABSLSLTF(115)=0.0	98410
04476*	68		ANSQ=AMACH**2.	
04477*	69		IF(AMACH .EQ. 0.0) GO TO 32	98420
04478*	70		DP=PD(151)*DWSLTF(115)*4..GAMA*ANSQ*(1..+(GAMA-1..)*ANSQ/2..)*	98430
04479*			XZERODV(WDOT*(1..-ANSQ))	98440
04480*	71		DT=TSF(115)*(GAMA-1..)*1..+GAMA*ANSQ)*ANSQ*2..*DWSLTF(115)*	98460
04481*			XZERODV((1..-ANSQ)*WDOT)	98470
04482*	72		GO TO 34	
04483*	73	32	DP = 0.0	
04484*	74		DT = 0.0	
04485*	75	34	CONTINUE	
04486*	76		PD(152) = PD(151) - DP	
04487*	77		TSF(115)=1	
04488*	78		TS=TSF(115)	98480
04489*	79		UMAX=SQRT(2..GAMA*R*GNOT*TO/(GAMA-1..))	98490
04490*	80		ITER=0	98500
04491*	81	40	IF(ITER-1)50,60,70	98510
04492*	82	50	TS=TSF(115)-DT	98520
04493*	83		GO TO 70	98530
04494*	84	60	TS = TSF(115) - DT	98540
04495*	85	70	TA2=TA1	98560

SUBROUTINE SLOT(IE)

044960	86		TA1=TS	98570
044970	87		DP=PD(151)-PD(152)	98580
044980	88		ICOUNT=J	98590
044990	89	80	IF(1COUNT-1)90,100,110	98600
045000	90	90	PSA(115)=PD(151)-DP/2.	98610
045010	91		GO TO 110	98620
045020	92	100	PSA(115)=PD(151)-DP	98630
045030	93	110	PDX2=PDX1	98640
045040	94		PDX1=PSA(115)	98650
045050	95		P=PSA(115)	98660
045060	96		ISR=0	
045070	97		CALL RDSUB(1SR)	
045080	98		IF(SLTBRH(115).EQ.2)OR,SLTBRH(115).EQ.3)RHSLOT=0.0	
045090	99		DWSLTA(115)=RHSLOT*DELF*AFF	98680
045100	100		RHSLOT(115)=RHSLOT	98690
045110	101		IF(ISTFLAG)120,120,150	98700
045120	102	120	WDOTD=WDOTSI+DWSLTA(115)	98710
045130	103		WDOTSD=WDOTD	98720
045140	104		UTMP=WDOTD*R*TS*ZERODV(PSA(115)*AP)	
045150	105		UTMP=AMIN(UTMP,UHAX)	98740
045160	106		IF(WDOTD)130,130,140	98750
045170	107	130	WDOTD=0.0	98760
045180	108		UTMP=0.0	98770
045190	109		140 ZHBAR=C.5*(U/SQRT(GNOT*R*GAMA*TSF(115))+	
045200			+ UTMPSQRT(GNOT*R*GAMA*TS))	
045210	110		PDY=PSF(115)+WDOT/GNOT*U/APHI-WDOTD/GNOT*UTMP/AP=	
045220			+ 2.*GAMA*PBAR*AMBAR*.2*(AP-APHI)/(AP*APHI)	
045230	111		PBAR=0.5*(PSF(115)+PDY)	
045240	112		DP = PSF(115) - PDY	
045250	113		GO TO 190	98800
045260	114	150	DND1=(PSF(115)+PSA(115))*DVDI/((12.*R*(TSF(115)+TSA(115)))+V.	
045270			X(PSF(115)+PSA(115)-PSFPR(115)-PSAPR(115))/(12.*R	98820
045280			X*(ISE(115)+TSA(115))*DELT)	
045290	115		WDOTSD=WDOTSI-DND1	98840
045300	116		WDOTD=WDOTSD+DWSLTA(115)	98850
045310	117		IF(WDOTD)160,160,170	98860
045320	118	160	WDOTD=0.0	98870
045330	119		UTMP=0.0	98880
045340	120		GO TO 180	98890
045350	121	170	UTMP=WDOTD*R*TS*ZERODV(PSA(115)*AP)	98900
045360	122		UTMP=AMIN(UTMP,UHAX)	98910
045370	123	180	PDY=(WDOT*U/GNOT-WDOTD*UTMP/GNOT+PSF(115)*APHI+(PSF(115)	98920
045380			X+PSA(115))*(AP-APHI)/2.-((PSF(115)+PSA(115))*(U+UTMP)*DVDI)/(48.*	98930
045390			XGNOT*R*TS))/AP	98940
045400	124		PDY=PDY-(V*(U+UTMP)*(PSF(115)+PSA(115)-PSFPR(115)-PSAPR(115))/	98950
045410			X(48.*GNOT*R*TS*DELT))/AP	98960
045420	125	190	IF(ACCEL)200,200,210	98970
045430	126	200	TEMPA=0.0	98980
045440	127		GO TO 220	98990
045450	128	210	TEMPA=((PSF(115)+PSA(115))*(AP*APHI)*ACCEL*(AINCW-AINCHI))/	99000

04546*			X(48.*R*TS*AP)	99010
04547*	129	220	PDY=PDY+TEMPA	99020
04548*	130		PDY2=PDY1	99030
04549*	131		PDY1=PDY	99040
04550*	132		E2=E1	99050
04551*	133		E1=(PDX1-PDY1)*ZERODV(PDX1)	99060
04552*	134		ICOUNT=ICOUNT+1	99070
04553*	135		IF (ICOUNT-2) 100,230,230	99080
04554*	136	230	IF (ICOUNT-27) 260,260,290	99090
04555*	137	290	WRITE(6,250) IIS, PDX1, PDX2, PDY1, PDY2, E1, E2	99100
04556*	138	250	FORMAT(42H) ITERATION FOR DISCHARGE PRESSURE OF SLOT, I2, I1 HAS FAI	99110
04557*			XLED, / IHD, IUX, 7HPDX1 = E20.7, IUX, 7HPDX2 = E20.7 / IHD, IUX, 7HPDY1 = E2	99120
04558*			XG.7, IUX, 7HPDY2 = E20.7 / IHD, IUX, 7HE1 = E20.7, IUX, 7HE2 = E20.7	99130
04559*	139		ICHT=5	
04560*	140		IE=2	99140
04561*	141		RETURN	99150
04562*	142	260	IF (KDUMP(3)) 290,290,270	99160
04563*	143	270	WRITE(6,280) ICOUNT, PSA(IIS), PDY, WDOTD, PDX2, PDY2, E1, E2	99170
04564*	144	280	FORMAT(2X, 7H) ICOUNT=12, 2X, 3HPD=IPE11.4, 2X, 4HPDY=IPE11.4, 2X, 6HWDOTD=	99180
04565*			X IPE11.4, 2X, 5HPDX2=IPE11.4, 2X, 5HPDY2=IPE11.4, 2X, 3HE1=IPE11.4, 2X, 3HE	99190
04566*			X2=IPE11.4, 7)	99200
04567*	145	290	IF (ABS(E1)-.001) 310,310,300	99210
04568*	146	300	PSA(IIS)=(E2*PDX1-E1*PDX2)*ZERODV(E2-E1)	99220
04569*	147		GO TO 80	99230
04570*	148	310	PSA(IIS)=PDY	99240
04571*	149		PD(IIS2) = PSA(IIS)	
04572*	150		TS = 10 - (GAMA - 1.0) * UTMP * 2 / (2.0 * GNOT * GAMA * R)	
04573*	151	320	UTMP = WDOTD * R / AP * TS / PD(IIS2)	
04574*	152		DT = TSF(IIS) - TS	
04575*	153		TY2 = TY1	
04576*	154		TY1 = TS	
04577*	155		TE2=TE1	99300
04578*	156		TE1=(TX1-TY1)/TX1	99310
04579*	157		ITER=ITER+1	99320
04580*	158		IF (ITER-2) 60,330,330	99330
04581*	159	330	IF (ITER-27) 360,360,340	99340
04582*	160	340	WRITE(6,350) IIS, TX1, TX2, TY1, TY2, TE1, TE2	99350
04583*	161	350	FORMAT(44H) ITERATION FOR DISCHARGE TEMPERATURE OF SLOT, I2, I1 HAS	99360
04584*			X FAILED, / IHD, IUX, 6HTX1 = E20.7, IUX, 6HTX2 = E20.7 / IHD, IUX, 6HTY1 = E2	99370
04585*			XG.7, IUX, 6HTY2 = E20.7 / IHD, IUX, 6HTL1 = E20.7, IUX, 6HTE2 = E20.7	99380
04586*	162		IE=2	99390
04587*	163		RETURN	99400
04588*	164	360	IF (KDUMP(3)) 390,390,370	99410
04589*	165	370	WRITE(6,380) ITER, TS, T, TX2, TY2, TE1, TE2	99420
04590*	166	380	FORMAT(2X, 5H) ITER=12, 2X, 3HTS=IPE11.4, 2X, 2HT=IPE11.4, 2X, 4HTX2=IPE11.4,	99430
04591*			X 4, 2X, 4HTY2=IPE11.4, 2X, 3HE1=IPE11.4, 2X, 3HE2=IPE11.4, 7)	99440
04592*	167	390	IF (ABS(TE1)-.001) 410,410,400	99450
04593*	168	400	TS=(TE2-TX1-TE1-TX2)/(TE2-TE1)	99460
04594*	169		GO TO 40	99470
04595*	170	410	CONTINUE	99480

045960	171	WSLOT(115)=WDOTS	99490
045970	172	UA(115)=WDOTS*RTS/(PSA(115)*PI*RF**2.)	99500
045980	173	APA(115)=PI*RF**2.	99510
045990	174	ABSLTA(115)=AFF	99520
046000	175	IF ISLTORH(115).EQ.2..OR.SLTORH(115).EQ.3.) ABSLTA(115)=0.0	
046010	176	WDTS(115)=WDOT	99530
046020	177	POA(115)=PSA(115)*(TO/T)**(GAHA/(GAHA-1.))	99540
046030	178	TSA(115) = TS	
046040	179	U = UHP	
046050	180	T = TS	
046060	181	ANACH=U/SQRT(GNOT*GAHA*R*T)	99560
046070	182	AMPN=ANAX1(AMPN,ANACH)	99570
046080	183	DELTA=WDOTD*ZERODV(12.*AP*U)	99580
046090	184	PO=PD(152)*(TO/T)**(GAHA/(GAHA-1.))	99590
046100	185	P=PD(152)	99600
046110	186	WDOT=WDOTD	99610
046120	187	III=152	99620
046130	188	IIJ=152	99630
046140	189	IF (KDUMP(13)) 440,440,420	99640
046150	190	CONTINUE	99650
046160	191	WRITE(6,430)WSLOT(115),APE(115),UFI(115),POF(115),PSE(115),TSE(115)	99660
046170		X),PD(151),WSLOT(115),APA(115),UA(115),POA(115),PSA(115),TSA(115),	99670
046180		XPD(152),DWSLTF(115),RBSLTF(115),ABSLTF(115),DWSLTA(115),	99680
046190		XBSLTA(115),ABSLTA(115),WDOTS(115)	99690
046200	192	430 FORMAT(1H3,7HWSLOT1=IPE11.4,2X,4HAPF=IPE11.4,2X,3HUF=IPE11.4,2X,4H	99700
046210		XPOF=IPE11.4,2X,4HPSF=IPE11.4,2X,4HSF=IPE11.4,2X,4HHPD(151)=IPE11.4	99710
046220		X/1X,7HWSLOT=IPE11.4,2X,4HAPA=IPE11.4,2X,3HUA=IPE11.4,2X,4HPOA=IPE	99720
046230		X 11.4,2X,4HPSA=IPE11.4,2X,4HTSA=IPE11.4,2X,4HHPD(152)=IPE11.4/	99730
046240		X1X,7HDWSLTF=IPE11.4,2X,7HBSLTF=IPE11.4,2X,7HABSLTF=IPE11.4/1X,7HD	99740
046250		XWSLTA=IPE11.4,2X,7HBSLTA=IPE11.4,2X,7HABSLTA=IPE11.4,2X,6HWDOTS=1	99750
046260		XPE11.4)	99760
046270	193	440 IF (OUPS.GT. 0.5) GO TO 500	99770
046280	194	ISP1=115+1	99780
046290	195	IF (SCUR(115,2)-SCUR(ISP1,1))+TSLOTA(115)-TSLOTF(115)) 500,450,450	99790
046300	196	450 OOPS=1.0	99800
046310	197	WDOTSI=WDOTS1+(SCUR(ISP1,1)-SCUR(115,2))*AFF*DELTA/DELTA	99810
046320	198	ITER=2	99820
046330	199	ICOUNT=0	99830
046340	200	DP=PD(151)=PD(152)	99840
046350	201	460 IF (ZCALC(152)-SCUR(ISP1,2)) 470,490,490	99850
046360	202	470 IS2=152+1	99860
046370	203	IF (152-NI) 460,480,480	99870
046380	204	480 IS2=NI	99880
046390	205	490 IS2=152-1	99890
046400	206	GO TO 80	99900
046410	207	500 ABSLOT=ABSLOT+ABSLTF(115)+ABSLTA(115).	
046420	208	115=115+1	
046430	209	SLTFLG=-1.0	99930
046440	210	RETURN	99940
046450	211	END	

ORIGINAL PAGE IS
OF POOR QUALITY

I N D E X

SUBROUTINE SLOTS (1E)

SYMBOL

REFERENCES

5	-	24	25*	
6	-	25	25	26*
10	-	24	24	33*
20	-	33	33	34*
25	-	32	40*	
30	-	25	33	49*
32	-	69	73*	
34	-	72	75*	
40	-	81*	169	
50	-	81	82*	
60	-	81	84*	158
70	-	81	83	85*
80	-	69*	147	266
90	-	89	90*	
100	-	89	92*	135
110	-	89	91	93*
120	-	101	101	102*
130	-	106	106	107*
140	-	106	109*	
150	-	101	114*	
160	-	117	117	118*
170	-	117	121*	
180	-	120	123*	
190	-	113	125*	
200	-	125	125	126*
210	-	125	128*	
220	-	127	129*	
230	-	135	135	136*
240	-	136	137*	
250	-	137WR	138*	
260	-	136	136	142*
270	-	142	143*	
280	-	143WR	144*	
290	-	142	142	145*
300	-	145	146*	
310	-	145	145	148*
320	-	151*		
330	-	158	158	159*
340	-	159	160*	
350	-	160WR	161*	
360	-	159	159	164*
370	-	164	165*	
380	-	165WR	166*	
390	-	164	164	167*
400	-	167	166*	
410	-	48	167	167 170*
420	-	189	190*	
430	-	191WR	192*	

I N D E X

SUBROUTINE SLOTTED

DEL	-	6CO	55	99	197						
DEL	-	8CO	23	63	114	124	197				
DELTA	-	15CO	183								
DELTS	-	4CO									
DELTS	-	4CO									
DELTT	-	4CO									
DELZ	-	6CO									
EIS	-	15CO									
OP	-	70	73	76	87	90	92	112	200		
OT	-	71	74	82	84	152					
DVDT	-	63	114	123							
DADOT	-	9CO									
DADT	-	23	114	115	176						
DADTS	-	11CO	176	191	191						
DASLTA	-	11CO	99	102	116	191					
DASLTF	-	11CO	55	56	70	71	191				
E1	-	21DA	132	133	137	143	145	146	146		
E2	-	132	137	143	146	146					
GAMA	-	3CO	62	70	70	71	71	79	79	109	109
	-	110	150	150	177	177	181	184	184		
GAMAG	-	3CO									
GNOT	-	2CO	62	79	109	109	110	110	123	123	123
	-	124	150	181							
HCO	-	6CO									
ICHN	-	17CO	139								
ICOUNT	-	88	89	134	134	135	136	143	199		
IE	-	1AG	140	162							
IFLAG	-	20CO									
III	-	14CO	187								
IIJ	-	14CO	188								
II5	-	14CO	28	29	30	31	36	37	38	39	40
	-	41	47	53	53	54	55	56	57	58	59
	-	60	61	63	63	64	64	65	66	67	67
	-	67	70	71	71	77	78	82	84	90	92
	-	94	95	98	98	99	100	102	104	109	110
	-	111	112	114	114	114	114	114	114	114	114
	-	114	114	116	121	123	123	123	123	123	124
	-	124	124	124	128	128	137	143	146	148	149
	-	152	160	171	172	172	173	174	175	175	175
	-	176	177	177	178	191	191	191	191	191	191
	-	191	191	191	191	191	191	191	191	191	191
	-	191	191	191	194	195	195	197	207	207	208
	-	208									
INPUTG	-	3CO									
INPUTM	-	4CO									
INPUTT	-	5CO									
INPUTU	-	6CO									
ISI	-	14CO	26	33	34	49	59	61	70	76	87
	-	90	92	191	200						
IS2	-	14CO	27	35	76	87	149	151	184	185	187

SUBROUTINE SLOT(IE)

		108	191WR	200	201	202W	202	203	204W	205W	205
ISPI	-	194W	195	195	197	201					
ISK	-	50W	51AG	96W	97AG						
ITER	-	80W	81	157W	157	158	159	165WR	198W		
KDUMP	-	600	142	164	189						
NCSCUE	-	300									
NCSTR	-	300									
NI	-	1400	203	204							
NSLOT	-	1400									
NTABL	-	1400									
UOPS	-	22W	193	196W							
P	-	1500	49W	95W	185W						
PA	-	600	33	34	35	36	37	38	39		
PARMAA	-	2000									
PARMU	-	1400									
PANH	-	1500									
PANH	-	1600									
PARN	-	1700									
PARNY	-	1800									
PARNZ	-	1900									
PBAR	-	60W	110	111W							
PD	-	900	26W	27W	33	34W	35W	49	59	61	70
		76W	76	87	87	90	92	149W	151	184	185
PDX1	-	191WR	191WR	200	200						
PDX2	-	210A	93	94W	133	133	137WR	146			
PDX2	-	93W	137WR	143WR	146						
PDY	-	110W	111	112	123W	124W	124	127W	129	131	143WR
		148									
PDY1	-	210A	130	131W	133	137WR					
PDY2	-	130W	137WR	143WR							
PH	-	1500									
PH1	-	600	26	27	28	29	30	31			
PI	-	200	40	61	63	64	75	172	173		
PMAA	-	1400									
PMIN	-	1400									
PO	-	1900	58	184W							
POA	-	1000	31W	39W	177W	191WR					
PJF	-	1000	30W	38W	58W	191WR					
POH	-	1500									
PRESS	-	300									
PRNT	-	800									
PSA	-	1000	28W	36W	90W	92W	94	95	104	114	114
		121	123	123	124	128	143WR	146W	148W	149	172
		177	191WR								
PSAPR	-	1800	114	124							
PSF	-	1000	29W	37W	59W	60	110	111	112	114	114
		123	123	123	124	128	191WR				
PSFPR	-	1800	114	124							
K	-	300	61	62	79	104	109	109	114	114	121
		123	124	128	150	151	172	181			

[illegible]

I N D E X

SUBROUTINE SLOT(IE)

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UTMP	=	44#	104#	105#	105	108#	109	110	119#	121#	122#
		122	123	123	124	150	151#	179			
V	=	44#	114	124							
VF	=	9C0									
VP	=	9C0									
WDOT	=	14C0	52	70	71	110	123	186#			
WDOTD	=	14C0	45#	52#	56	102#	103	104	106	107#	110
		116#	117	118#	121	123	143WR	151	183	186	
WDOTI	=	8C0									
WDOTSD	=	42#	103#	115#	116	171	172				
WDOTSI	=	46#	56#	57	61	102	115	197#	197		
WORKA	=	7C0									
WLOTU	=	10C0	171#	191WR							
WLOTI	=	10C0	47#	57#	191WR						
XBARIH	=	13C0									
XMBAN	=	109#	110								
ZCALC	=	8C0	201								
ZERODV	=	70	71	104	121	133	146	183			

I N D E X

FUNCTION SQRT (X)

PAGE 233

04646.
04647.
04648.
04649.
04650.1
2
3
4
5FUNCTION SQRT (X)
SQRT = 0.0
IF (X .NE. 0.0) SQRT = (ABS(X)) **.5
RETURN
END670
680
690
700

I N D E X

FUNCTION SQRT (X)

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SYMBOL

REFERENCES

AUS - 3
SQRT - IEY 2 3
A - IAG 3 3

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 104

SUBROUTINE SUBSON(ICHUKE,IOPT)

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04651*      1      SUBROUTINE SUBSON(ICHUKE,IOPT)
04652*      2      IMPLICIT REAL (A-H,O-Z,M)
04653*      3      COMMON/CONSTS/GNOT,P1,RADIAN
04654*      4      COMMON/INPUTG/CSTAR,GAMA,R,HCSTR,PRESS(20),CSTR(20),GAMAG(20),
04655*      5      1      AMWG(20),TCUMB(20),HCSCOE
04656*      6      COMMON/INPUTU/DELF,PA,PHI,HCO,DELZ,KDUNP(72)
04657*      7      COMMON/CONA/DELT,APHI,WDOT1,ANTRU,TIMLW,UT,ANLOPS,ACCEL,
04658*      8      1      ABCYL,PRNT(101,15),AINCHI,AMACH,ZCALC(101)
04659*      9      COMMON/CONH/AEL,PEPUI
04660*      10     8      COMMON/PARHB/AP,PHIN,PHAX,WDOT,111,11J,WDOTD,HSL0T,HTABE,TOFLAG,
04661*      11     1      BKNDUT,115,151,152,M1,SCUR(10,2)
04662*      12     9      COMMON/PARHF/PH,TIME,AINCH,T,P,DELIA,U,PON,D15,AMPN,AT,AMW,AKRST
04663*      13     10     COMMON/PARHAA/TO,IFLAG
04664*      14     11     COMMON/PARHAK/PIAT,AENT,U1A,PIA,PIB,A2A,VGA,PMA,PHAZ,THA,VGAZ,
04665*      15     5      HDBLTA,UIB,A1A,MD10
04666*      16     12     COMMON/PARHAN/ A1B,A2B
04667*      17     C      NAMELISTS USED FOR DEBUG PRINT
04668*      18     13     NAMELIST/SUBS1/PRCRIT,MEX,AEXAS,AENTAS
04669*      19     14     NAMELIST/SUBS2/ITER,      HBLTA,TBETA,CBETA,UBETA,UMA,PBETA,PONC,
04670*      20     5      PON
04671*      21     15     ICHUKE=J
04672*      22     16     ITER=J
04673*      23     17     STO=IOPT-2
04674*      24     18     IF (PA.GT.0.0) GO TO 10
04675*      25     19     5 ICHUKE=1
04676*      26     20     RETURN
04677*      27     21     10 PON=PIAT
04678*      28     22     PRCRIT=(2./ (GAMA+1.))**2*(GAMA/(GAMA-1.))
04679*      29     C      WRITE(6,SUBS1)
04680*      30     15 IF (PA/PON.LE.PRCRIT) GO TO 5
04681*      31     24     MEX=SQRT((2./ (GAMA-1.))**2*((PON/PA)**2*((GAMA-1.)/GAMA)-1.))
04682*      32     C      WRITE(6,SUBS1)
04683*      33     25     IF (MEX.GE.1.0) GO TO 5
04684*      34     26     AEXAS= (1./MEX)*((2./ (GAMA+1.))**2*(1.+(GAMA-1.)/2.*MEX**2))**
04685*      35     5      ((GAMA+1.)/(2.* (GAMA-1.)))
04686*      36     27     AENTAS=(AENT/AEE)*AEXAS
04687*      37     C      WRITE(6,SUBS1)
04688*      38     28     IF (AENTAS.LT.1.0) GO TO 5
04689*      39     29     CALL MACH(ALN1AS,GAMA,MBETA)
04690*      40     30     TBETA = TO/(1.+(GAMA-1.)/2.*MBETA**2)
04691*      41     31     CBETA = SQRT(GAMA*GH*1.0*TBETA)
04692*      42     32     UBETA = MBETA*CBETA
04693*      43     33     UMA = UBETA + U1A
04694*      44     34     PBETA = (1./AENT)*((PIA*A1A-PIB*A1B+(PIB+PIA)*(A2A-A1A)/2.0
04695*      45     5      -VGA*UMA*(PMA-PHAZ)/(12.*GNOT*R*(THA-DELT)),STO
04696*      46     5      -PMA*UMA*(VGA-VGAZ)/(12.*GNOT*R*(THA-DELT)),STO
04697*      47     5      -UBETA*HDBETA/GNOT + U1A*WDOT/GNOT + UIB*MD10/GNOT )
04698*      48     35     PONC = PBETA*(1.+(GAMA-1.)/2.*MBETA**2)**2*(GAMA/(GAMA-1.))
04699*      49     C      WRITE(6,SUBS2)
04700*      50     36     IF (ABS(PON-PONC).LE.0.001) RETURN

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SUBROUTINE SUBSON(I,CHOK,IOPT)

C4701*	37	PONZ=PON
C4702*	38	PON = PON/PONC *PON
C4703*	39	ITER=ITER+1
C4704*	40	IF(ITER.LT.25) GO TO 15
C4705*	41	WRITE(6,1000) PON,PONC,PONZ
C4706*	42	1000 FORMAT('ITERATIONS EXCEEDED IN SUBSON/' PON=' ,F10.4,3X,'PONC=' ,
C4707*		& F10.4,3X,'PONZ=' ,F10.4)
C4708*	43	RETURN
C4709*	44	END

I N D E X

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SUBROUTINE SUBSON(ICHOKE,IOPT)

SYMBOL	REFERENCES
S	19* 23 25 28
IO	10 21*
IS	23* 40
IOCU	41WH 42*
AIA	11CU 34 34
AIB	12CO 34
AZA	11CU 34
AZB	12CO
ABCYL	6CO
AUS	36
ACCEL	6CO
AEE	7CO 27
AENT	11CU 27 34
AENTAS	13NH 27* 28 29AG
ALXAS	13NH 26* 27
A[INCH]	6CO
A[INCH]	9CO
AKKST	9CO
AMACH	6CO
AMPH	9CO
AMW	9CO
AMWG	4CO
AMIBU	6CO
AMLOPS	6CO
AP	8CO
APHI	6CO
AI	9CO
BRNDUT	8CO
CBETA	14NH 31* 32
COMA	6CO
CUMH	7CO
CONSTS	3CO
CSTAN	4CO
CSTR	4CO
DELF	5CO
DELT	6CO 34 34
DELTA	7CO
DELZ	5CO
DIS	9CO
GAMA	4CO 22 22 22 24 24 24 26 26 26
	26 29AG 30 31 35 35 35
GAMAG	4CO
GNOT	3CO 31 34 34 34 34 34
HCO	5CO
ICHOKE	1AG 15* 19*
IFLAG	1CO
III	8CO
IIJ	8CO

INDEX

SUBROUTINE SUBSON(ICHOKE,IUPT)

[illegible]

I N D E X

SUBROUTINE SUBSON(CHOKE,IQPT)

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SUBS2	-	14NH		
SUBSON	-	1LY		
I	-	9CO		
TBETA	-	14NH	30=	31
TCOMB	-	4CO		
TINC	-	9CO		
TINEN	-	6CO		
TMA	-	11CO	34	34
TU	-	12CO	30	
TOFLAG	-	8CO		
U	-	9CO		
UIA	-	11CO	33	34
UIB	-	11CO	34	
UBETA	-	14NH	32=	33
UMA	-	14NH	33=	34
UT	-	6CO		
VGA	-	11CO	34	34
VGAZ	-	11CO	34	
WDOT	-	8CO	34	
WDOTD	-	8CO		
WDOTI	-	6CO		
ZCALC	-	6CO		

+-----+


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C4760*      38      IF(TAU.LT.TAUWDP(111,12))GO TO 70
C4761*      39      IF(TAUZ(111,12).LT.TAUWDP(111,12))GO TO 80
C4762*      40      TAUZ(111,12) = TAU
C4763*      41      TAUS = TAUS + TAU
C4764*      42      GO TO 50
C4765*      43      60 WRITE(6,15)A1NC,12,TAU,TAUWDP(111,12),TIME
C4766*      44      65 FORMAT(1X,'WEB BURNOUT INCREMENT LOCATION =',F10.4,5X,'SECTOR NO.
C4767*      ' ',I3,4X,'TAU =',F8.4,4X,'TAUWDP =',F8.4,4X,'TIME =',F7.2)
C4768*      45      ANIBU=ANIBU+1.0/SECH
C4769*      46      GO TO 70
C4770*      47      50 CONTINUE
C4771*      48      PRNT(111,13)=TAUS/SECH
C4772*      49      90 DLL=ABS(A1NC-A1NCY)
C4773*      50      IF(DEL.GT.(.0001)) GO TO 30
C4774*      51      DLL=ABS(A1NC-HC0)
C4775*      52      IF(DEL.GT.(.0001)) RETURN
C4776*      53      100 IF(HSUBHG.GT.C) GO TO 105
C4777*      54      DO6C12=1,NSCTRS
C4778*      55      60 TAUZ(111+1,12)=TAUZ(111+1,12)+RBZ(111+1,12)*DELT
C4779*      56      GO TO 110
C4780*      57      105 TAU1=0.
C4781*      58      TAU2=0.
C4782*      59      DO12712=1,NSCTRS
C4783*      60      TAUZ(111+1,12) = TAUZ(111+1,12) + RBZ(111+1,12) * DELT
C4784*      61      TAUZ(111+1,12) = AMINI(TAUZ(111+1,12),TAUHNA)
C4785*      62      TAUZ(111+2,12)=TAUZ(111+2,12)+RBZ(111+2,12)*DELT
C4786*      63      TAUZ(111+2,12) = AMINI(TAUZ(111+2,12),TAUHNB)
C4787*      64      TAU1 = TAU1 + TAUZ(111+1,12)
C4788*      65      107 TAU2 = TAU2 + TAUZ(111+2,12)
C4789*      66      PRNT(111+1,13)=TAU1/SECH
C4790*      67      PRNT(111+2,13)=TAU2/SECH
C4791*      68      110 IE=-1
C4792*      69      RETURN
C4793*      70      1010 IIS=1
C4794*      71      DO 1020 I=1,NSLOT
C4795*      72      PSFPR(1)=PSF(1)
C4796*      73      1020 PSAPR(1)=PSA(1)
C4797*      74      IF(ANIBO.LT.ANITW) GO TO 1030
C4798*      75      BURNOUT=1.0
C4799*      76      1030 IF(ISTFLAG.GT.0.0) GO TO 1040
C4800*      77      IF(ISTDYST.GT.0.0) GO TO 1083
C4801*      78      1033 WRITE(6,1035)
C4802*      79      1035 FORMAT('INVALID INPUT OF TIME CONTROL PARAMETERS// ERROR IN LINK
C4803*      S. 2 OF IBM MODULE')
C4804*      80      STOP
C4805*      81      1040 IF(ISTDYST.GT.0.0) GO TO 1083
C4806*      C      IF IN START-TRANSIENT, CHECK FOR LIMITING TIME, PRESSURE
C4807*      C      OR TOTAL IMPULSE WHICH WILL TERMINATE START-TRANSIENT.
C4808*      82      IF(TST)1050,1050,1045
C4809*      83      1045 T1ST=1ST

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SUBROUTINE TISUB(IE)

04810*	84	HALT=TIME
04811*	85	GO TO 1070
04812*	86	1050 IF (PST) 1060, 1060, 1055
04813*	87	1055 TEST=PST
04814*	88	HALT=PON
04815*	89	GO TO 1070
04816*	90	1060 IF (AITST) 1080, 1080, 1065
04817*	91	1065 TEST=AITST
04818*	92	HALT=AIT
04819*	93	1070 IF (HALT.LT.TEST) GO TO 1110
04820*	94	1080 STDYSTW1.0
04821*	95	1083 IF (BRHOUT) 1090, 1090, 1085
04822*	96	1085 IF (DELT0.EQ.0.0) GO TO 1033
04823*	97	DELT=DELT0
04824*	98	PRIC = PRT10
04825*	99	GO TO 1100
04826*	100	1090 IF (DELT55.EQ.0.0) GO TO 1033
04827*	101	DELT=DELT55
04828*	102	PRIC = PRT155
04829*	103	1100 CONTINUE
04830*	104	IF (TIMPT2.EQ.0.0) GO TO 20
04831*	105	IF ((TIME.LT.TIMPT1).OR.(TIME.GE.TIMPT2)) GO TO 20
04832*	106	DELT=DELTSP
04833*	107	PRIC = PRT1SP
04834*	108	GO TO 20
04835*	109	1110 IF (DELTST.EQ.0.0) GO TO 1033
04836*	110	1110 DELT = DELTST
04837*	111	PRIC = PRT1ST
04838*	112	IF (DELTST.EQ.DELETSS) PRIC=PRT1SS
04839*	113	IF (DELTST.EQ.DELETTO) PRIC=PRT1TO
04840*	114	GO TO 1100
04841*	115	120 GO130=0.0
04842*	116	DO12512=1, NSCTRS
04843*	117	IF (TAUZ(111,12).LT.TAUNDP(111,12)) GO130=1.0
04844*	118	125 CONTINUE
04845*	119	IF (GO130.GT.0.0) GO TO 130
04846*	120	GO TO 175
04847*	121	130 IF ((111-1).LE.0) GO TO 170
04848*	122	IF (AINC.GT.SCUR(115,1)) GO TO 170
04849*	123	170 SCUR(115,1)=TEMP4
04850*	124	TSLOTF(115)=TEMP3
04851*	125	TAUT=0.0
04852*	126	DO17312=1, NSCTRS
04853*	127	TAUZ(111,12)=TAUZ(111,12)+RBZ(110,12)*DELT
04854*	128	173 TAUT=TAUT+TAUZ(111,12)
04855*	129	PRNT(111,13)=TAUT/SECH
04856*	130	175 TEMP5=KBSLTA(115)*DELT
04857*	131	TEMP6=SCUR(115,2)+TEMP5
04858*	132	180 IF (AINC.LT.(SCUR(115,2)+.0001)) GO TO 190
04859*	133	GO TO 195

04860*	134	190	III=III+1
04861*	135		IIJ=IIJ+1
04862*	136		AINC=ZCALC(IIII)
04863*	137		IF(III.LT.NI) GO TO 180
04864*	138		GO TO 240
04865*	139	195	IF(TEMP5.EQ.0.0) GO TO 196
04866*	140		GO TO 197
04867*	141	196	IBACK=0
04868*	142		GO TO 200
04869*	143	197	DEL=ABS(AINC-TEMP6)
04870*	144		IF(DEL.GT.0.0001) GO TO 199
04871*	145	198	IBACK=0
04872*	146		GO TO 200
04873*	147	199	IF(AINC.LT.(TEMP6-.0001)) GO TO 198
04874*	148		IBACK=1
04875*	149	200	IF(AINC.GT.(AINCY-.0001)) GO TO 200
04876*	150		JUMP=0
04877*	151		GO210=0.0
04878*	152		DO24512=1,NSECTRS
04879*	153		IF(TAUZ(III,12).LT.TAUNDP(III,12))GO210=1.0
04880*	154	205	CONTINUE
04881*	155		IF(160210.GT.0.0)GO TO 210
04882*	156		II5=II5+1
04883*	157		GO TO 240
04884*	158	210	CONTINUE
04885*	159	230	SCUR(II5,2)=TEMP6
04886*	160		ISLUTA(II5)=TEMP5
04887*	161		II5=II5+1
04888*	162		IF(AINC.GT.(AINCY-.0001)) GO TO 250
04889*	163		IF(IBACK.NE.1) GO TO 240
04890*	164		III=III-1
04891*	165		IIJ=IIJ-1
04892*	166		IBACK=0
04893*	167		AINC=ZCALC(IIII)
04894*	168	240	TAUT=0.0
04895*	169		DO24512=1,NSECTRS
04896*	170		TAUZ(III,12)=TAUZ(III,12)+RDZ(IIJ,12)*DEL
04897*	171		TAUZ(III,12)=AMIN1(TAUZ(III,12),TAUNDP(III,12))
04898*	172	245	TAUT=TAUT+TAUZ(III,12)
04899*	173		PRUT(III,13)=TAUT/SECN
04900*	174		IF(III.EQ.NI) GO TO 100
04901*	175		GO TO 30
04902*	176	250	III=III-1
04903*	177		IIJ=IIJ-1
04904*	178		RETURN
04905*	179	260	JUMP=1
04906*	180		GO TO 250
04907*	181		END

SYMBOL		REFERENCES	
20	-	24	25
30	-	26	50
50	-	35	42
60	-	54	55
70	-	38	40
80	-	39	43
85	-	43WR	44
90	-	49	
100	-	53	174
105	-	53	57
107	-	59	65
110	-	56	68
120	-	33	115
125	-	116	118
130	-	119	121
170	-	121	122
173	-	126	128
175	-	120	130
180	-	132	137
190	-	132	134
195	-	133	139
196	-	139	141
197	-	140	143
198	-	145	147
199	-	144	147
200	-	32	142
205	-	152	154
210	-	155	158
230	-	159	
240	-	138	157
245	-	169	172
250	-	162	176
260	-	149	179
1010	-	24	24
1020	-	71	73
1030	-	74	76
1033	-	78	96
1035	-	78WR	79
1040	-	76	81
1045	-	82	83
1050	-	82	82
1055	-	80	87
1060	-	86	86
1065	-	90	91
1070	-	85	89
1080	-	90	90
1083	-	77	81
1085	-	95	90

I N D E X

SUBROUTINE TISUB(IE)

[illegible]

[illegible]

I N D E X

SUBROUTINE Y1SUB(IE)

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PA	-	6C0								
PARHAB	-	19C0								
PARHIB	-	16C0								
PARHF	-	17C0								
PARH4	-	18C0								
PARHS	-	20C0								
PARHY	-	21C0								
PD	-	11C0								
PH	-	17C0								
PHI	-	6C0								
PHAX	-	16C0								
PHIN	-	16C0								
POA	-	12C0								
POF	-	12C0								
PON	-	17C0	89							
PRIC	-	2C0	98	102	107	111	112	113		
PKNT	-	14C0	48	66	67	129	173			
PRT15P	-	2C0	107							
PRT15S	-	2C0	102	112						
PRT15T	-	2C0	111							
PRT1TD	-	2C0	98	113						
PSA	-	12C0	73							
PSAPR	-	21C0	73							
PSF	-	12C0	72							
PSFPR	-	21C0	72							
PST	-	4C0	86	87						
PTIME	-	2C0								
RD	-	11C0								
RBSLTA	-	13C0	130							
RBSLTF	-	13C0	30							
RBZ	-	11C0	36	55	60	62	127	170		
RF	-	8C0								
REF	-	19C0								
RFY	-	14C0								
RIDH	-	8C0								
SA	-	5C0								
SB	-	5C0								
SCUR	-	16C0	31	122	123	131	132	159		
SECH	-	23	45	48	66	67	129	173		
SECTOR	-	22C0								
SLTBKH	-	5C0								
SPHDT	-	18C0								
SPONDT	-	18C0								
STDYST	-	3C0	77	81	94					
STFLAG	-	3C0	76							
T	-	17C0								
TAU	-	15C0	36	37	37	38	40	41	43WR	
TAU1	-	57	64	64	66					
TAU2	-	58	65	65	67					
TAUHNA	-	7C0	61							

I N D E X

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SUBV FINE TISSUE(IE)

TAUHHB	=	7CO	63								
TAUNA	=	14CO									
TAUNY	=	14CO									
TAUS	=	34	41	41	48						
TAUT	=	125	128	128	129	168	172	172	173		
TAUWUP	=	11CO	37	38	39	43WR	117	153	171		
TAUWA	=	14CO									
TAUWY	=	14CO									
TAUZ	=	11CO	36	39	40	55	55	60	60	61	61
		62	62	63	63	64	65	117	127	127	128
		163	170	170	171	171	172				
TEMP	=	29									
TEMP3	=	30	31	124							
TEMP4	=	31	33	123							
TEMP5	=	130	131	139	160						
TEMP6	=	131	143	147	159						
TEST	=	83	87	91	93						
TIME	=	17CO	43WR	84	105	105					
TIMEW	=	10CO									
TIMEP11	=	4CO	105								
TIMEP12	=	4CO	104	105							
TISUB	=	1LY									
TOFLAG	=	16CO									
TSA	=	12CO									
TSF	=	12CO									
TSLOTA	=	13CO	160								
TSLOTE	=	13CO	124								
TST	=	4CO	82	83							
U	=	17CO									
UA	=	12CO									
UF	=	12CO									
UT	=	10CO									
VF	=	11CO									
VFH	=	18CO									
VFINI	=	18CO									
VFN	=	18CO									
VFPP	=	14CO									
VIS	=	18CO									
VP	=	11CO									
WDOT	=	16CO									
WDOTD	=	16CO									
WDOTI	=	10CO									
WURKA	=	8CO									
WSLOTD	=	12CO									
WSLOTI	=	12CO									
WUAKIH	=	15CO									
ZCALC	=	16CO	26	136	167						

I N D E X

SUBROUTINE VARI(A,AJSIG,ATAB,NPTS)

PAGE 249

04900*	1	SUBROUTINE VARI(A,AJSIG,ATAB,NPTS)
04909*	2	DIMENSION ATAB(1)
04910*	3	SUMX=0.0
04911*	4	DO 10 I=1,NPTS
04912*	5	SUMX = SUMX + ATAB(I)
04913*	6	10 CONTINUE
04914*	7	XBAR = SUMX/FLOAT(NPTS)
04915*	8	SUMX=0.0
04916*	9	DO 20 I=1,NPTS
04917*	10	SUMX = SUMX + (ATAB(I)-XBAR)**2
04918*	11	20 CONTINUE
04919*	12	AJSIG = 3.*SQRT(SUMX/(FLOAT(NPTS-2)))/A
04920*	13	RETURN
04921*	14	END

04922*	1	SUBROUTINE XLIN (A,B,N,X,Y,L)	
04923*	2	DIMENSION A(1),B(1)	
04924*	3	IF (X.LT.0.0) GO TO 22	
04925*	4	IF (X.LT.A(1)) GO TO 21	
04926*	5	IF (X.GT.A(N)) GO TO 22	
04927*	6	K = 0	
04928*	7	1 K = K + 1	400
04929*	8	IF (X.GT. A(K+1)) GO TO 1	420
04930*	9	Y = B(K) + (X - A(K)) * (B(K+1) - B(K)) / (A(K+1) - A(K))	430
04931*	10	GO TO 10	440
04932*	11	21 Y=B(1)	
04933*	12	GO TO 2	
04934*	13	22 Y=B(N)	
04935*	14	2 WRITE(6,3) L,X,Y	
04936*	15	3 FORTN11H,10X,'X IS OUT OF RANGE IN XLIN',3X,'CALL NO.=',12,'.',	
04937*		3X,'IND. VAR.=',F11.3,3X,'DEP. VAR.=',F11.3)	
04938*	16	10 RETURN	
04939*	17	END	

SYMBOL		REFERENCES									
1	-	7*	8								
2	-	12	14*								
3	-	14WH	15*								
10	-	16	16*								
21	-	4	11*								
22	-	3	5	13*							
A	-	1AG	201	4	5	8	9	9	9		
B	-	1AG	201	9	9	9	11	13			
K	-	6*	7*	7	8	9	9	9	9	9	9
L	-	1AG	14WK								
N	-	1AG	5	13							
X	-	1AG	3	4	5	8	9	14WR			
XLIN	-	1LY									
Y	-	1AG	9*	11*	13*	14WR					

I N D E X

FUNCTION ZERO DV (X)

PAGE 253

04940*	1	FUNCTION ZERO DV (X)	720
04941*	2	ZERO DV = 0.0	730
04942*	3	IF (X.NE.0.0) ZERO DV = 1. / X	740
04943*	4	RETURN	750
04944*	5	END	

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FUNCTION ZEROV (X)

SYMBOL

REFERENCES

X	-	IAG	3	3
ZEROV	-	LEY	2a	3a

***** SUPER INDEX *****

SYMBOL - ***** ROUTINES IN WHICH THE SYMBOL IS USED *****

A	-	DATLOC	INPUT	PRT7	VAR1	XLIN			
A1	-	IOHOUT							
A1A	-	NSCE	SUBSON						
A1B	-	LOOKUP	HNCHN4	NSCE	SUBSON				
A2	-	IOHOUT							
A2A	-	NSCE	PRT7	SUBSON					
A2B	-	LOOKUP	NSCE						
A3SIG	-	VAR1							
AAN	-	LOOKUP	HNCHN4	PRT7					
AANA	-	LOOKUP	HNCHN4	NSCE					
AANB	-	LOOKUP	HNCHN4	NSCE					
AB	-	PARTBN							
ABCYL	-	HNCHN4	PRT7	SEGSUB					
ABHD	-	IOH	LOOKUP	HNCHN4					
ABH	-	IOH	LOOKUP	HNCHN4					
ABHA	-	LOOKUP	HNCHN4						
ABNB	-	LOOKUP	HNCHN4						
ABS	-	ACUS	AIUST	AIUSUB	ENDCSB	HNCHN1	HNCHN4	NSCE	SEGSUB
	-	SLIPH	SLUT	SWRT	SUBSON	TISUB			
ABSLOT	-	IOHOUT	PRT7	SEGSUB	SLUT				
ABSLTA	-	IOHOUT	SLUT						
ABSLTF	-	IOHOUT	SLUT						
ABTOT	-	IOHOUT	HNCHN4	PRT7	RHSTSB				
AC	-	PARTBN							
ACCEL	-	AIUST	IOH	SLUT					
ACCLT	-	AIUST							
ACUS	-	ACUS	ASIN	ENDCSB	NSCE				
AD	-	PARTBN							
AE	-	PRT7							
AEE	-	PRT7	SEIPH	SUBSON					
AENT	-	NSCE	SUBSON						
AENTAS	-	SUBSON							
AER	-	ENDCSB							
AEXAS	-	SUBSON							
AF	-	PARTBN							
AFF	-	SEGSUB	SLUT						
AFFICH	-	SEGSUB							
AFHI	-	SEGSUB	SLUT						
AFRPL	-	HNCHN1	HNCHN4						
AFRPS	-	HNCHN4	SEGSUB						
AFX	-	IOH	SEGSUB						
AFXTLH	-	SEGSUB							
AFY	-	IOH	SEGSUB						
AFYTEH	-	SEGSUB							
AGI	-	HACH							
AH	-	PARTBN							
AHALFC	-	PRT7							
AHH	-	LOOKUP	HNCHN4	PRT7					

***** SUPER INDEX *****

AHO	=	MNCHN4					
AIOCYL	=	IOHOUT	MNCHN4				
AIBST	=	AIBSUB	MNCHN4				
AIBSUB	=	AIBST	MNCHN4	SEGSUB			
AINC	=	MNCHN1	MODTSB	SETPH	TISUB		
AINCHI	=	AIBST	PARTBN	SEGSUB	SLOT		
AINCHP	=	SEGSUB					
AINCHS	=	PARTBN	SEGSUB				
AINCIN	=	IOH	MNCHN1	MNCHN4	MODTSB	SEGSUB	SETPH
AINCA	=	AIBST	MNCHN4	PARTBN	RBSUB	SEGSUB	SLOT
AINCHP	=	SEGSUB					
AINCHS	=	PARTBN	SEGSUB				
AINCA	=	MODTSB	PARTBN	SEGSUB	SETPH	TISUB	
AINCY	=	MODTSB	PARTBN	SEGSUB	TISUB		
AIPCYL	=	IOHOUT	MNCHN4				
AIT	=	PRT7	SETPH	TISUB			
AITIN	=	INERT	INIT1	PRT7			
AITS1	=	IOH	TISUB				
AITVAC	=	IOHOUT	PRT7				
AITVIN	=	INERT	PRT7				
AJBB	=	IOHOUT	PRT7				
AJBHED	=	IOHOUT					
AJBNOZ	=	IOHOUT	LOOKUP				
AJBNZA	=	IOHOUT	LOOKUP				
AJPHEO	=	IOHOUT					
AJPNOZ	=	IOHOUT	LOOKUP				
AJPNZA	=	LOOKUP					
AJPP	=	IOHOUT	PRT7				
AKG	=	IOH	RBSUB	RBVSUB			
AKR	=	IOH	MNCHN4	RBSTSB	RBSUB	RBVSUB	
AKR2	=	RBSUB					
AKR3B	=	RBSUB					
AKR4	=	RBSUB					
AKRADJ	=	RBSUB					
AKRH	=	IOH	MNCHN4				
AKRHLD	=	CONV	MNCHN4				
AKRN	=	IOH	MNCHN4				
AKRST	=	CONV	IOH	PRT7	RBSTSB	RBSUB	
AKRTMP	=	RBSUB					
AKSLOT	=	IOH	RBSUB				
AKU	=	IOH	RBSUB	RBVSUB			
ALAH	=	SETPH					
ALFE	=	ENDCSB					
ALFEM	=	ENDCSB					
ALITDE	=	ENDCSB					
ALLPX	=	PARTBN					
ALLPY	=	PARTBN					
ALP	=	PARTBN	SEGSUB				
ALPBOX	=	SEGSUB					
ALPBY	=	SEGSUB					

I N D E X

***** SUPER INDEX *****

ALPHA	-	PARTBN					
ALPHI	-	PARTBN	SEGSUB				
ALPHIS	-	SEGSUB					
ALPI	-	INPT					
ALPPL	-	IBH	INPT	LOOKUP	PARTBN	SEGSUB	
ALPRP	-	LOOKUP	MNCHN1	MNCHN4			
ALPS	-	SEGSUB					
ALPSEC	-	INPT	LOOKUP	MNCHN1	MNCHN4	SEGSUB	
ALPTEN	-	SEGSUB					
ALPX	-	SEGSUB					
ALPY	-	SEGSUB					
AMACH	-	AIBST	AIBSUB	MNCHN4	NSCE	SEGSUB	SLOT
AMAXU	-	MNCHN1					
AMAXI	-	AIBST	MNCHN4	RBSUB	SEGSUB	SETPH	SLOT
AMBSS	-	SETPH					
AMBSU	-	SETPH					
AMINI	-	MNCHN4	SETPH	SLOT	TISUB		
AMPH	-	AIBST	AIBSUB	MNCHN4	PRT7	SETPH	SLOT
AMSI	-	AIBST	SLOT				
AMN	-	IBHOUT	MNCHN4	NSCE	PRT7	KBSTSB	
AMNG	-	MNCHN4	NSCE	KBSTSB			
AN2	-	NSCE	PRT7	SETPH			
AN2R	-	NSCE					
ANI	-	MNCHN1					
ANIBU	-	IBH	MNCHN4	SETPH	TISUB		
ANITH	-	IBH	TISUB				
ANLOPS	-	MNCHN4	PRT7	SETPH			
ANN	-	IBH	IBHOUT	SETPH			
AND	-	IBH	MNCHN1				
ANDAX	-	MNCHN4					
ANDAX	-	MNCHN4					
ANDOH	-	MNCHN1					
ANDX	-	MNCHN4					
AO	-	PARTBN					
AOEM	-	ENDCSU	MNCHN1				
AOMH	-	MNCHN1					
AOMCTL	-	IBHOUT	MNCHN4				
AOMH	-	MNCHN1					
AP	-	AIBST	AIBSUB	MNCHN4	NSCE	PRT7	SEGSUB SLOT
APA	-	IBHOUT	SLOT				
APF	-	IBHOUT	SLOT				
APH	-	MNCHN4					
APHI	-	AIBST	AIBSUB	MNCHN4	SEGSUB	SLOT	
APHTEN	-	SEGSUB					
APORT	-	IBH	INPT	MNCHN4	NSCE	SEGSUB	
APORTH	-	MNCHN4					
APRTSC	-	INPT	MNCHN1	MNCHN4	SEGSUB		
APT	-	SEGSUB					
APTEH	-	SEGSUB					
APX	-	SEGSUB					

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APY	=	SLGSUB					
AR	=	HACH	NSCE	PARTBN			
AR1	=	HACH					
AR2	=	HACH					
ARINPT	=	HACH					
ASIN	=	ASIN					
AT	=	IGHOUT	HOOTSUB	NSCE	PRT7	KBSTSB	SETPH
ATAB	=	VARI					
ATAH	=	PARTBN	SEGSUB				
ATHAX	=	SETPH					
AU	=	PARTBN					
AX	=	MCHNN1					
AY	=	MCHNN1					
B	=	XLIN					
BIE	=	RBSUB					
BE	=	ENDCSB	MCHNN1				
BH	=	MCHNN1					
BIGUN	=	MCHNN4					
BINT	=	HACH	NSCE				
BLKTLH	=	RBSUB					
BN	=	MCHNN1					
BOE	=	RBSUB					
BUT	=	LLSSQ					
BUT2	=	LLSSQ					
BRNOUT	=	IGH	MCHNN4	TISUB			
BTADE	=	IGH	MCHNN1	RBSUB			
BYEBYE	=	MCHNN1					
CIB	=	NSCE					
CAA	=	ATBSUB					
CAE	=	ENDCSB					
CASE	=	INPUT					
CBD	=	ATBSUB					
CBE	=	ENDCSB					
CBETA	=	NSCE	SUBSON				
CC	=	ATBSUB					
CCCE	=	ENDCSB					
CCVE	=	ENDCSB					
CDCE	=	ENDCSB					
CDVE	=	ENDCSB					
CECE	=	ENDCSB					
CEMPC	=	SETPH					
CEVE	=	ENDCSB					
CF	=	PRT7					
CFC	=	SETPH					
CFD	=	SETPH					
CFOL	=	IGH	IGHOUT	PRT7	SETPH		
CGCYL	=	IGHOUT					
CKDUMP	=	MCHNN4					
CKTIME	=	IGH	MCHNN4				
CLOPS	=	ATBST	CONV	MCHNN4	SETPH		

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CH	-	MNCHN4	SETPH						
COULT	-	SETPH							
COEINT	-	BL DAT	INERT	PRT1					
CONT	-	INPUT							
CONV	-	SETPH							
COS	-	ENDCSB	NSCE	PARTBN	SETPH				
CRP	-	AIBST	IBH	INPT					
CRT	-	AIBST	IBH	INPT					
CNW	-	IBH	INPT	SETPH					
CS	-	LESSQ							
CSCUEF	-	BL DAT	INPT	MNCHN4	PRT1	RBSTSB			
CSTAR	-	INPT	MNCHN4	PRT7	RBSTSB	SETPH			
CSTR	-	MNCHN4	RBSTSB						
DAP	-	AIBST							
DAPH1	-	AIBST							
DATLOC	-	INPT							
DE	-	PRT7	SETPH						
DE1	-	ENDCSB	MNCHN1						
DEED	-	AIBST	CONV	SLTPH					
DEL	-	TISUB							
DELDT	-	MODTSB							
DELF	-	IBHOUT	MNCHN4	NSCE	PRT7	RBSTSB	RBSUB	SEGSUB	SETPH
DELFX	-	SETPH							
DELH	-	ENDCSB	IBH						
DELL	-	ENDCSB							
DELLP	-	SETPH							
DELT	-	AIBST	IBHOUT	INERT	MNCHN1	MNCHN4	MODTSB	NSCE	SEGSUB
	-	SLTPH	SLOT	SUBSON	TISUB				
DELTA	-	AIBST	AIBSUB	MNCHN4	RBSUB	SEGSUB	SLOT		
DELTIM	-	INERT							
DELTSP	-	IBH	TISUB						
DELTSS	-	IBH	MNCHN4	TISUB					
DELTST	-	AIBST	IBH	MNCHN4	TISUB				
DELTSV	-	IBHOUT							
DELTT	-	INERT							
DELTTD	-	IBH	TISUB						
DELWF	-	SETPH							
DELWL	-	RBSUB							
DELZ	-	AIBST	MNCHN1	PARTBN	SEGSUB				
DELZS	-	SEGSUB							
DELZT	-	SEGSUB							
DH1	-	IBH	MNCHN1						
DIFAB	-	CONV							
DIFAKR	-	CONV							
DIS	-	CONV	SETPH						
DISB	-	CONV	SETPH						
DLRF	-	ENDCSB							
DLTMP	-	AIBSUB							
DN1	-	MNCHN1							

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DP	=	ALIST	SLOT						
DPHDT	=	RBSTSB							
DT	=	ALIST	MODTSB	NSCE	SETPH	SLOT			
DTINT	=	HNCHN4	MODTSB	SETPH					
DUMX	=	INPT							
DUMX1	=	SEGSUB							
DUMX2	=	SEGSUB							
DUMY	=	INPT							
DVDT	=	SLOT							
DWDUT	=	ALIST	ALBSUB	HNCHN4	NSCE	SEGSUB			
DWDUTA	=	NSCE							
DWDUTB	=	HNCHN4	NSCE						
DWDT	=	ALIST	HNCHN4	NSCE	SLOT				
DWDTA	=	HNCHN4	NSCE						
DWDTB	=	HNCHN4	NSCE						
DWDT5	=	IGNOUT	SEGSUB	SLOT					
DWDLTA	=	IGN	IGNOUT	SEGSUB	SLOT				
DWDLIF	=	IGN	IGNOUT	SEGSUB	SLOT				
DWTLN	=	SEGSUB							
E1	=	ALIST	SETPH	SLOT					
E2	=	ALIST	SETPH	SLOT					
ENDCSB	=	HNCHN4							
EPI	=	SETPH							
EPCA	=	ALIST							
EPCN	=	ALIST							
EPC	=	PRT7	SETPH						
EPR	=	PRT7							
EPS	=	ALIST	SETPH						
EPSA	=	ALIST							
EPSN	=	ALIST							
ER	=	MODTSB							
ERBAR	=	MODTSB							
EREXP	=	MODTSB							
ERR	=	DATLOC	INIT1						
ERRON	=	HNCHN4							
EXP	=	RSUB							
EXPI	=	SETPH							
F	=	PRT7	SETPH						
FACTOR	=	LOOKUP							
FI	=	INERT	PRT7						
FIZ	=	INERT	INIT1						
FLOAT	=	VAR1							
FN	=	LLSSQ							
FTOLL	=	PRT7							
FTVAC	=	PRT7							
FVAC	=	IGNOUT	PRT7						
FVACA	=	IGNOUT							
FX	=	SETPH							
G	=	RSUB							
GAMA	=	ALIST	ALBSUB	INPT	HACH	HNCHN4	NSCE	PRT7	RBSTSB

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		SEGSUB	SETPH	SLOT	SUBSON				
GAMAG	-	MNCHN4	NSCE	RUSTSB					
GAMASQ	-	RUSTSB							
GCR	-	RUSTSB							
GD	-	PARTBN							
GM1	-	SETPH							
GNOT	-	ALBST	ALBSUB	IBH	IBHOUT	MNCHN4	NSCE	RUSTSB	SETPH
		SLOT	SUBSON						
GU133	-	TISUB							
GU210	-	TISUB							
GPI	-	SETPH							
GRIENP	-	RUSTSB							
HALT	-	TISUB							
HCO	-	ALBST	IBHOUT	MNCHN1	SETPH	TISUB			
HE1	-	ENDCSB							
HE2	-	ENDCSB							
HLAUBR	-	INPUT							
HEO	-	ENDCSB							
HER	-	ENDCSB							
HHR	-	IBH	RUSTSB						
HRB	-	RUSTSB							
HSUBMG	-	ENDCSB							
I	-	DATLOC	IBH	IBHOUT	INPT	INPUT	LESSQ	LOOKUP	MNCHN1
		MNCHN4	MODTSB	PARTBN	PRT1	RUSTSB	SEGSUB	SETPH	TISUB
		VAR1							
I2	-	IBH	LOOKUP	MNCHN4	RUSTSB	SEGSUB	TISUB		
IAPT	-	PARTBN							
IBDATA	-	INPT							
IBH	-	INPUT	HACH	MAIN P					
IBHOUT	-	MNCHN4							
IBH	-	INPT							
ICHN	-	ALBST	IBH	IBHOUT	MNCHN1	MNCHN4	MODTSB	NSCE	RUSTSB
		RUSTSB	SEGSUB	SETPH	SLOT				
ICHOKE	-	NSCE	SUBSON						
ICOUNT	-	SLOT							
IDH	-	INPUT							
IDP	-	MNCHN4							
IE	-	ALBST	ALBSUB	IBHOUT	MNCHN4	MODTSB	SEGSUB	SETPH	SLOT
		TISUB							
IEND	-	MNCHN4	RUSTSB						
IEN	-	ENDCSB							
IERROR	-	MNCHN1							
IFLA4	-	ALBST	MNCHN4	SETPH					
IFLS	-	PARTBN	SEGSUB						
IFLSEC	-	SEGSUB							
IFN	-	PARTBN							
III	-	ALBST	ALBSUB	IBH	MNCHN4	MODTSB	PARTBN	RUSTSB	SEGSUB
		SLOT	TISUB						
IIIM	-	PARTBN							
IIJ	-	IBH	MNCHN4	MODTSB	SEGSUB	SLOT	TISUB		

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IIS	-	IBM	IBMOUT	MNCHN1	MNCHN4	SEGSUB	SLOT	TISUB
IJ	-	SEGSUB						
IK	-	MODTSB						
IN	-	DATLOC	INPT					
INERT	-	IBMOUT						
INIT1	-	MACH	MAIN P					
INPT	-	IBM						
INPUT	-	MACH	MAIN P					
INPUT1	-	INPUT						
IOPT	-	MNCHN4	NSCE	SUBSON				
ICUT	-	IBMOUT						
IPASS	-	NSCE						
IPBNFL	-	PARTBN	SEGSUB					
IPBNFS	-	SEGSUB						
IPLANE	-	MNCHN4						
IRP	-	MNCHN4						
IS	-	MNCHN4	NSCE	PARTBN	RB SUB	SEGSUB		
IS1	-	IBM	MNCHN4	SEGSUB	SLOT			
IS2	-	IBM	MNCHN4	SEGSUB	SLOT			
ISAV	-	SEGSUB						
ISP1	-	SLOT						
ISR	-	SLOT						
ISS	-	PARTBN						
ITAO	-	LOOKUP						
ITER	-	ALIST	MACH	SETPH	SLOT	SUBSON		
ITERH	-	MNCHN4						
ITP10	-	NSCE						
IT20	-	NSCE						
IT310	-	NSCE						
IX2	-	MNCHN4						
IAP	-	MNCHN4						
J	-	IBM	IBMOUT	INPT	LOOKUP	MNCHN1	MNCHN4	NSCE
JJ	-	MNCHN1						SETPH
JUMP	-	MNCHN4	TISUB					
K	-	IBMOUT	LOOKUP	MNCHN1	MNCHN4	XLIN		
KDUMP	-	ALIST	ALISUB	CONV	IBM	MNCHN4	SEGSUB	SETPH
KP	-	SEGSUB						SLOT
KP1	-	SEGSUB						
KPLANE	-	IBM	INPT	LOOKUP	MNCHN1	MNCHN4	MODTSB	NSCE
		SETPH						SEGSUB
KPM1	-	MNCHN4						
KPRNT	-	IBMOUT	PRT7					
KRPLH	-	MNCHN4						
KRPH	-	MNCHN4	PARTBN	SEGSUB				
KRPH1	-	MNCHN4						
L	-	IBMOUT	MNCHN4	PRT1	SEGSUB	XLIN		
LI	-	MNCHN4						
LEWIS	-	INPUT						
LI	-	LOOKUP						
LH1	-	LOOKUP						

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LIST1	-	BL DAT	PRESET	PRT1			
LL	-	SEGSUB					
LN	-	LOOKUP					
LN1	-	LOOKUP					
LOOKUP	-	MNCHN4					
M	-	MACH	MNCHN4				
M1	-	MACH					
M18	-	MNCHN4	NSCE				
M2	-	MACH					
MACH	-	NSCE	SUBSON				
MBETA	-	NSCE	SUBSON				
MSIB	-	NSCE	SUBSON				
MSBETA	-	NSCE	SUBSON				
MEY	-	SUBSON					
MFINT1	-	INERT	INIT1				
MIF	-	INERT	PRT7				
MIF2	-	INERT	INIT1				
MIGN	-	PRT7					
MIR	-	INERT	PRT7				
MIRR	-	INERT					
MITOT	-	BL DAT	INERT	INIT1	PRT1	PRT7	
MIZ	-	INERT	INIT1				
MICASE	-	PRT7					
MHGROS	-	PRT7					
MNCHN1	-	IBM					
MNCHN4	-	IBM					
MNOZ	-	PRT7					
MOOTSBB	-	IBMOUT					
MPIT	-	PRT7					
MPR	-	INERT					
MPRR	-	INERT					
MPTOT	-	INERT					
MTVC	-	PRT7					
N	-	INPT	LESSQ	LOOKUP	MNCHN4	XLIN	
NACCEL	-	ALBST	IBM				
NAKFT	-	IBM	RDSUB				
NAKEND	-	IBM					
NAKHLD	-	RDSUB					
NAKR	-	IBM					
NAKRST	-	CONV					
NAME	-	DATLOC					
NBACK	-	MNCHN4	TISUB				
NCARD	-	BL DAT	PRESET	PRT1	PRT7		
NCASE	-	INPT	INPUT	MACH	MAIN P	MNCHN1	PRT1
NCASES	-	MACH	MAIN P	PRESET	PRT1		
NCH	-	IBM	MNCHN4				
NCONT	-	IBM					
NCONT	-	INPUT	PRT1				
NCSCOE	-	IBM	INPT				
NCTR	-	IBM	INPT	MNCHN4	NSCE	RDSUB	

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NCX	=	PARTBN							
NCY	=	PARTBN							
NCT	=	IBM	MODTSB						
NDUNA	=	SEGSUB							
NEND	=	ENDCSB	HNCHN1						
NEPS	=	ALBST	IBM						
NF	=	INERT	INPUT	PRESET	PRT1				
NCEO	=	IBM	INPT	LOOKUP	PARTBN	SEGSUB			
NCEUHD	=	IBM	LOOKUP	HNCHN1					
NCEUHN	=	IBM	LOOKUP	HNCHN1					
NI	=	ALBST	IBM	IBMOUT	LOOKUP	HNCHN1	HNCHN4	NSCE	PRT7
		RBSUB	SEGSUB	SLTPH	SLOT	TISUB			
NIBFLG	=	BL DAT	INPT	INPUT					
NIBH	=	INPUT							
NIBOUT	=	INPT	INPUT						
NIDH	=	INPUT							
NIM1	=	HNCHN4							
NIP1	=	IBMOUT	HNCHN4						
NIP2	=	IBMOUT	HNCHN4						
NI	=	INPUT							
NLEWIS	=	INPUT	PRESET	PRT1					
NHAR	=	SLTPH							
NOOT	=	INPUT							
NPA	=	IBM	HNCHN4						
NPH	=	IBM	HNCHN4	RBSTSB	SETPH				
NPLUT	=	BL DAT	PRESET	PRT1	PRT7				
NPRINT	=	HACH	MAIN P						
NPSUM1	=	HNCHN1							
NPSUB	=	HNCHN1							
NPTS	=	VARI							
NSCARD	=	BL DAT	PRESET	PRT1	PRT7				
NSCE	=	IBM	HNCHN4						
NSCTRS	=	IBM	INPT	LOOKUP	HNCHN1	HNCHN4	RBSUB	SEGSUB	TISUB
NSI	=	INPUT	PRESET	PRT1					
NSLOT	=	IBM	IBMOUT	HNCHN1	HNCHN4	PARTBN	SEGSUB	SETPH	TISUB
NSTAPE	=	BL DAT	PRESET	PRT1	PRT7				
NSUBNG	=	ENDCSB	IBM	IBMOUT	LOOKUP	HNCHN1	HNCHN4	PRT7	RBSUB
		SLTPH	TISUB						
NT	=	RBSUB							
NTAB	=	IBM	RBSUB						
NTABE	=	IBM	HNCHN1						
NTAPE	=	BL DAT	HACH	MAIN P	PRESET	PRT1	PRT7		
NTEST	=	ALBST	HNCHN1	SEGSUB					
NTEST4	=	HNCHN1	RBSUB						
NUHIT	=	BL DAT							
NUHDS	=	BL DAT							
NUHIDH	=	INPUT							
QOPS	=	SLOT							
OUTTAP	=	HACH	MAIN P						
P	=	ALBST	ALBSUB	LESS4	HNCHN4	NSCE	RBSUB	SEGSUB	SETPH

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PIA	-	NSCE	SUBSON						
PIAT	-	NSCE	SUBSON						
PIB	-	MNCHN4	NSCE	SUBSON					
PIBC	-	NSCE							
PIBG	-	NSCE							
PIBU	-	NSCE							
PIBT	-	MNCHN4	NSCE						
PZBT	-	NSCE							
PZOLD	-	NSCE							
PA	-	IBM	MNCHN4	NSCE	RBSUB	SETPH	SLOT	SUBSON	
PAKTH	-	SEGSUB							
PBAR	-	AIBSUB	SLOT						
PBETA	-	NSCE	SUBSON						
PCRTT	-	AIBST							
PCTAB	-	CONV	IBM	MNCHN4	SEGSUB				
PCTABX	-	CONV	MNCHN4						
PD	-	AIBST	AIBSUB	MNCHN1	MNCHN4	RBSUB	SEGSUB	SLOT	
PDPK	-	AIBST	MNCHN1	MNCHN4					
PDX1	-	AIBST	SLOT						
PDX2	-	AIBST	SLOT						
PDUY	-	AIBST	SLOT						
PDUY1	-	AIBST	SLOT						
PDUY2	-	AIBST	SLOT						
PLPU	-	IBM	PRT7	SETPH					
PEP01	-	MNCHN1	SETPH						
PEPOX1	-	SETPH							
PEPOX2	-	SETPH							
PEPOY	-	SETPH							
PEPOY1	-	SETPH							
PEPOY2	-	SETPH							
PH	-	AIBST	AIBSUB	MNCHN4	PRT7	RBSUB	SETPH		
PH1	-	AIBST	AIBSUB	MNCHN4	SETPH	SLOT			
PHMAX	-	SETPH							
PHOLD	-	SETPH							
PHST	-	RBSUB							
PHX	-	SETPH							
PI	-	ACOS	ENDCSB	IBM	MNCHN1	MNCHN4	MODTSB	NSCE	PRT7
	-	SETPH	SLOT						
PIH	-	AIBST							
PIA	-	NSCE	SUBSON						
PIAX	-	AIBST	AIBSUB	MNCHN4	SETPH				
PIAZ	-	NSCE	SUBSON						
PIB	-	NSCE							
PIBZ	-	NSCE							
PIIN	-	AIBST	AIBSUB	MNCHN4	SETPH				
PO	-	MNCHN4	NSCE	SEGSUB	SLOT				
POA	-	IBMOUT	SLOT						
POF	-	IBMOUT	SLOT						
POLD	-	MNCHN4							

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PON	-	IBHOUT	HNCHN4	MODTSB	NSCE	PRT7	RBSTSB	SETPH	SUBSON
		TISUB							
PONBAR	-	IBH	MODTSB						
PONC	-	SUBSON							
PONX	-	SETPH							
PONZ	-	SUBSON							
POUT	-	AIHST							
PR	-	PARTON							
PRADN	-	NSCE							
PRABO	-	NSCE							
PRCKIT	-	HNCHN4	SUBSON						
PRESLT	-	HACH	MAIN P						
PRESS	-	HNCHN4	NSCE	RBSTSB					
PRIC	-	BL DAT	IBHOUT	TISUB					
PRNT	-	AIHST	IBHOUT	HNCHN1	HNCHN4	PRT7	SEGSUB	SETPH	TISUB
PRT1	-	HACH	MAIN P						
PRT7	-	IBHOUT							
PRTFLG	-	IBH	IBHOUT						
PRTISP	-	BL DAT	TISUB						
PRTISS	-	BL DAT	TISUB						
PRTIST	-	BL DAT	TISUB						
PRTIIC	-	BL DAT	TISUB						
PSA	-	IBHOUT	SLOT	TISUB					
PSAPK	-	SLOT	TISUB						
PSF	-	IBHOUT	SLOT	TISUB					
PSFPR	-	SLOT	TISUB						
PSUPU	-	SETPH							
PST	-	IBH	TISUB						
PTIME	-	BL DAT	IBH	IBHOUT	PRT7				
PTIMSV	-	IBHOUT							
PIMP	-	AIHST	NSCE						
QR	-	PARTON							
R	-	AIHST	AIHST	IBHOUT	INPT	HNCHN4	NSCE	RBSTSB	RBSUB
		SETPH	SLOT	SUBSON					
RAD	-	AIHST							
RADIAN	-	ENDCSB	IBH						
RB	-	HNCHN4	NSCE	RBSTSB	RBSUB	SEGSUB			
RB1A	-	NSCE							
RB1B	-	NSCE							
RB2A	-	NSCE							
RB2B	-	NSCE							
RBH1	-	RBSUB	SEGSUB						
RBHPL	-	HNCHN4							
RBS	-	HNCHN4							
RBSLOT	-	RBSUB	SLOT						
RBSLTA	-	IBH	IBHOUT	SLOT	TISUB				
RBSLTF	-	IBH	IBHOUT	SLOT	TISUB				
RBSTSB	-	HNCHN4	RBSUB						
RBSUB	-	HNCHN4	NSCE	SEGSUB	SLOT				
RBSUB	-	HNCHN1							

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KBZ	-	MNCHN1	MNCHN4	NSCE	PK17	SEGSUB	TISUB			
KBZH	-	MNCHN4								
KBZH	-	MNCHN4								
KBZND	-	MNCHN4								
KE1	-	ENDCSB	MNCHN1							
KE2	-	ENDCSB								
KEFTLN	-	RBSUB								
KE	-	AIJST	ENDCSB	IBM	INPT	LOOKUP	MNCHN1	MNCHN4	PARTBN	
		SEGSUB	SLIPH	SLOT						
KE1	-	MNCHN4								
KE2	-	MNCHN4								
KEFN	-	MNCHN1								
KEH1	-	PARTBN	SEGSUB	SLOT						
KEH1S	-	PARTBN								
KE1	-	SEGSUB	SLIPH							
KE1DP	-	MNCHN4								
KE5	-	PARTBN	SEGSUB							
KEA	-	PARTBN	SEGSUB	SETPH						
KEY	-	PARTBN	SEGSUB							
KH1	-	MNCHN1								
KH01B	-	NSCE								
KH0THP	-	NSCE								
KH0TOL	-	SLIPH								
K1	-	ENDCSB	IBM	INPT	LOOKUP	MNCHN1	MNCHN4			
K11	-	MNCHN4								
K12	-	MNCHN4								
K1DH	-	MNCHN1								
K101DP	-	MNCHN4								
KH1	-	MNCHN1								
KPL	-	IBM	INPT	LOOKUP	SEGSUB					
KSL01A	-	SEGSUB	SLOT							
KSL0TF	-	SEGSUB	SLOT							
SA	-	IBM	INPT	MNCHN1						
SB	-	IBM	INPT	MNCHN1						
SCUR	-	IBMOUT	INPT	MNCHN1	MNCHN4	PARTBN	SEGSUB	SETPH	SLOT	
		TISUB								
SD1S	-	SETPH								
SECH	-	INPT	LOOKUP	MNCHN4	RBSUB	SEGSUB	TISUB			
SEGSUB	-	MNCHN4								
SETPH	-	MNCHN4								
SIGNAP	-	RBSUB								
SII	-	RL DAT	INERT	PK11						
SIN	-	ENDCSB								
SIRATC	-	IBM	NSCE							
SKA	-	IBMOUT								
SAF	-	IBMOUT								
SLOPL	-	AIJST	HACH	NSCE						
SLOT	-	SEGSUB								
SLTBNH	-	IBM	MNCHN1	SLOT						
SLTELG	-	IBM	MNCHN4	RBSUB	SEGSUB	SLOT				

***** SUPER INDEX *****

SPHDT	=	PRT7	SETPH						
SPGNDT	=	PRT7	SETPH						
SQRT	=	ACOS	AIBST	AIBSUB	ENDCSB	INPT	HNCHN4	NSCE	SEGSUB
		SETPH	SLOT	SQRT	SUBSON	VAR1			
SRMDT1	=	PRT7							
SRMVT1	=	PRT7							
STATIC	=	BL DAY							
STDYST	=	AIBST	IBH	HNCHN4	RBSTSB	RBSUB	SEGSUB	TISUB	
STFLAG	=	AIBST	AIBSUB	IBH	HNCHN4	RBDISB	RBSUB	SEGSUB	SETPH
		SLOT	TISUB						
STO	=	SUBSON							
SUBSON	=	NSCE							
SUBNF	=	SETPH							
SUBNF2	=	SETPH							
SUNA	=	LESSQ	VAR1						
SUMX2	=	LESSQ							
SUMX2Y	=	LESSQ							
SUMX3	=	LESSQ							
SUMX4	=	LESSQ							
SUMX5	=	LESSQ							
SUMY	=	LESSQ							
SVALP	=	HNCHN4							
SWDGIN	=	PRT7	SETPH						
T	=	AIBST	AIBSUB	HNCHN4	NSCE	SEGSUB	SETPH	SLOT	
T1A	=	NSCE							
T1B	=	HNCHN4	NSCE						
T1BC	=	NSCE							
T1BQ	=	NSCE							
T1BU	=	NSCE							
TA	=	PARTBN							
TA1B	=	LOOKUP							
TA2B	=	LOOKUP							
TABD	=	RBSUB							
TAB1	=	RBSUB							
TAN	=	PARTBN							
TAU	=	ENDCSB	LOOKUP	HNCHN1	HNCHN4	SEGSUB	TISUB		
TAU1	=	TISUB							
TAU2	=	TISUB							
TAUAUJ	=	IBH	INPT	HNCHN4					
TAUAFT	=	RBSUB							
TAUDUH	=	SEGSUB							
TAUE1	=	ENDCSB							
TAUE0	=	ENDCSB							
TAUHO	=	IBH	LOOKUP						
TAUHED	=	RBSUB							
TAUNAX	=	SEGSUB							
TAUHH1	=	PARTBN	SEGSUB						
TAUHH2	=	LOOKUP	TISUB						
TAUHH3	=	TISUB							
TAUHSL	=	PARTBN							

***** SUPER INDEX *****

TAUHH	-	PARTBN	SEGSUB						
TAUHA	-	SEGSUB							
TAUHT	-	SEGSUB							
TAUH	-	IBH	LOOKUP						
TAUNB	-	LOOKUP							
TAURPL	-	LOOKUP	HNCHN4						
TAUS	-	SEGSUB	TISUB						
TAUSLT	-	PARTBN							
TAUT	-	TISUB							
TAUROP	-	HNCHN4	HNCHN4	PARTBN	RHSUB	SEGSUB	TISUB		
TAURRP	-	LOOKUP	HNCHN4	SEGSUB					
TAUZ	-	LOOKUP	HNCHN4	HNCHN4	PARTBN	PRT7	RHSUB	SEGSUB	TISUB
TBETA	-	NSCE	SUBSON						
TBLCH	-	HNCHN4							
TBLPA	-	HNCHN4							
TCONB	-	HNCHN4	NSCE	RUSTSB					
TDELOT	-	MODTSB							
TE1	-	ALBST	SLOT						
TE2	-	ALBST	SLOT						
TEM1	-	ENDCSB							
TEM2	-	ENDCSB							
TEM3	-	ENDCSB							
TEM4	-	ENDCSB							
TEM5	-	ENDCSB							
TEMAFI	-	RHSUB							
TEMHED	-	RHSUB							
TEMP	-	ALBST	IBHOUT	HNCHN4	NSCE	SEGSUB	TISUB		
TEMP1	-	ALBSUB	ENDCSB	IBHOUT	RHSUB	SEGSUB	SETPH		
TEMP2	-	ENDCSB	IBHOUT	RHSUB					
TEMP3	-	TISUB							
TEMP4	-	TISUB							
TEMP5	-	TISUB							
TEMP6	-	ALBSUB	SETPH	TISUB					
TEHPA	-	SLOT							
TERH	-	IBHOUT	PRT7						
TERM1	-	NSCE							
TERM2	-	NSCE							
TERG	-	PRT7							
TEST	-	TISUB							
TORATH	-	PRT7							
THE	-	RHSUB							
THETA	-	PARTBN	SEGSUB						
THETLX	-	IBH	NSCE						
THOLD	-	SEGSUB							
THAX	-	IBH	HNCHN4						
THCN1	-	CONV	HNCHN4						
THCK2	-	HNCHN4	RUSTSB						
TIME	-	ALBST	ALBSUB	CONV	IBHOUT	INER1	HNCHN4	MODTSB	NSCE
TIMEAC	-	PARTBN	PRT7	RUSTSB	SEGSUB	SETPH	SLOT	TISUB	
	-	ALBST							

***** SUPER INDEX *****

TIMECK	-	ALIST							
TIMECH	-	HNCHN4							
TIMECT	-	MODTSB							
TIMECPA	-	HNCHN4							
TIMECPH	-	HNCHN4	RBSTSB	SETPH					
TIMEPS	-	ALIST							
TIMEW	-	SETPH							
TIMEZ	-	INERT	NSCE						
TIMEZZ	-	SETPH							
TIMEPT1	-	IBM	TISUB						
TIMEPT2	-	IBM	TISUB						
TISP	-	PNT7							
TISUB	-	MODTSB							
TITLE	-	INPUT							
TMA	-	NSCE	SUBSON						
TMB	-	NSCE							
TMID	-	LOOKUP							
TNN	-	LOOKUP							
TO	-	ALIST	ALISUB	INPT	HNCHN4	NSCE	RBSTSB	SEGSUB	SETPH
		SLOT	SUBSON						
TOFLAG	-	IBM	HNCHN4	RBSUB	SEGSUB				
TOP	-	LESS4							
TOP2	-	LESS4							
TOTEHP	-	HNCHN4							
TPH	-	HNCHN4	RBSTSB						
TRSUB	-	HNCHN1	NSCE						
TS	-	ALIST	PARTON	SLOT					
TSA	-	IBMOUT	SLOT						
TSVH1	-	PARTON							
TSVH	-	PARTON							
TSF	-	IBM	IBMOUT	SLOT					
TSLOTA	-	IBM	IBMOUT	SEGSUB	SLOT	TISUB			
TSLOTF	-	IBM	IBMOUT	SEGSUB	SLOT	TISUB			
TSS	-	SETPH							
TST	-	IBM	TISUB						
TTMP	-	ALISUB	NSCE						
TX	-	SETPH							
TX1	-	ALIST	SLOT						
TX2	-	ALIST	SLOT						
TASUB	-	HNCHN1							
TY1	-	ALIST	SLOT						
TY2	-	ALIST	SLOT						
U	-	ALIST	ALISUB	HNCHN4	NSCE	RBSUB	SEGSUB	SLOT	
UIA	-	NSCE	SUBSON						
UIB	-	HNCHN4	NSCE	SUBSON					
UA	-	IBMOUT	HNCHN1	SLOT					
UBETA	-	NSCE	SUBSON						
UCH	-	RBSUB							
UF	-	IBM	IBMOUT	SLOT					
UMA	-	NSCE	SUBSON						

UMAX	-	ALBST	SLOT			
UMH	-	NSCE				
UR	-	PARTBN				
UT	-	ALBSUB	HNCHN4			
UTHP	-	ALBST	ALBSUB	HNCHN4	NSCE	SLOT
UTHPT	-	ALBST				
V	-	ALBST	HNCHN1	HNCHN4	SLOT	
VCE	-	ENDCSB				
VCH	-	HNCHN1	HNCHN4	RDSTSB	SETPH	
VCHNP	-	LOM	HNCHN1	HNCHN4		
VCH	-	ALBST	HNCHN1	HNCHN4	RDSTSB	SETPH
VCHA	-	ENDCSB	HNCHN1	NSCE		
VCHB	-	ENDCSB	HNCHN1	NSCE		
VCHHA	-	HNCHN1				
VCHHB	-	HNCHN1				
VCHNP	-	LOM	HNCHN1	HNCHN4		
VE	-	SETPH				
VF	-	IBHOUT	HNCHN4	PRT7	SEGSUB	SETPH
VFCYL	-	IBHOUT	PRT7			
VFEJ	-	ENDCSB	HNCHN1			
VFH	-	IBHOUT	HNCHN4	PRT7	RDSTSB	SETPH
VFHO	-	HNCHN1	HNCHN4			
VFHPR	-	HNCHN4				
VFI	-	SEGSUB				
VFIHT	-	SETPH				
VFN	-	ALBST	IBHOUT	HNCHN4	PRT7	RDSTSB SETPH
VFNA	-	HNCHN4	NSCE			
VFNB	-	HNCHN4	NSCE			
VFND	-	LOM	HNCHN1	HNCHN4		
VFNDA	-	HNCHN4				
VFNDB	-	HNCHN4				
VFPP	-	SETPH				
VFEGB	-	SETPH				
VGA	-	NSCE	SUBSON			
VGAZ	-	NSCE	SUBSON			
VGB	-	NSCE				
VGBZ	-	NSCE				
VIS	-	SETPH				
VNOZSB	-	LOM	HNCHN1	NSCE		
VOLUME	-	RDSTSB				
VP	-	HNCHN4	PRT7	RDSTSB	SEGSUB	
VPH	-	HNCHN4	PRT7			
VPN	-	HNCHN4	PRT7			
VPR	-	ALBST	HNCHN1	HNCHN4		
VPT	-	SEGSUB				
VT	-	ALBST	SEGSUB			
VT1	-	SEGSUB				
VT2	-	SEGSUB				
VT3	-	SEGSUB				
WD	-	ALBST	CONV	SETPH		

***** SUPER INDEX *****

ADD	=	CONV	SETPH						
ADOT	=	AIUST	AIUSUB	CONV	HNCHN4	MODTSB	NSCE	PRT7	SEGSUB
		SETPH	SLOT	SUBSON					
ADOTD	=	AIUST	HNCHN4	SLOT					
ADOTI	=	AIUST	AIUSUB						
ADOTSD	=	SLOT							
ADOTSI	=	SLOT							
ADOTA	=	SETPH							
ADT	=	PRT7							
AF	=	IMOUT	INLKT	PRT7	SETPH				
AFACT	=	IGH	SETPH						
AFCOR	=	SETPH							
AFI	=	PRT7	SETPH						
AFIOL	=	SETPH							
AGPORT	=	SEGSUB	SETPH						
AGTUT	=	PRT7	SETPH						
AKD13	=	PRT7							
AKD4	=	PRT7							
ASLOTD	=	IMOUT	HNCHN1	SLOT					
ASLUT	=	IMOUT	HNCHN1	SLOT					
A	=	ACOS	ASIN	INPT	LESSQ	SQRT	XLIN	ZERODV	
A1	=	HNCHN4							
A2	=	HNCHN4							
ABAR	=	VAR1							
ABAKIH	=	IMOUT	PRT7						
ABH	=	IMOUT							
ABH	=	IMOUT	LOOKUP						
ABHA	=	LOOKUP							
ALIN	=	AIUST	INPT	HNCHN4	MODTSB	NSCE	RDSTSB	RBSUB	SEGSUB
AMBAR	=	AIUSUB	SLOT						
AP	=	HNCHN4							
Y	=	XLIN							
Y1	=	HNCHN4							
Z	=	ACOS							
ZCALC	=	IMOUT	HNCHN1	HNCHN4	PARTBN	SEGSUB	SETPH	SLOT	TISUB
ZERODV	=	AIUST	HNCHN4	PRT7	SLOT	ZERODV			

I N D E X
END OF ANALYSIS

Appendix B

SRB-IIID PROGRAM CROSS REFERENCE

SRB-IIID PERFORMANCE PREDICTION PROGRAM

SUBROUTINE MACH

INPUT	AGI	AR	ARINPT	AR1	AR2	BINT	GAMA	ITER
	M1	M2	SLOPE					
OUTPUT	AR	ARINPT	AR1	AR2	BINT	GAMA	ITER	M
	M1	M2	SLOPE					

SUBROUTINE LESSQ

INPUT	BOT	BOT2	CS	FN	I	N	P	SUMX
	SUMXY	SUMX2	SUMX2Y	SUMX3	SUMX4	SUMY	TOP	TOP2
	X							
OUTPUT	BOT	BOT2	FN	I	SUMX	SUMXY	SUMX2	SUMX2Y
	SUMX3	SUMX4	SUMY	TOP	TOP2	X		

SUBROUTINE INERT

INPUT	AITIN	COEINT	DELT	DELTIM	DELT1	F1	FIZ	HFINIT
	MIF	MIFZ	MIR	MIRR	HITOT	MIZ	MPR	MPRR
	MPTOT	NP	TIME	TIMEZ	WF			
OUTPUT	AITIN	AITVIN	DELTIM	F1	FIZ	HFINIT	MIF	HIFZ
	MIR	MIRR	HITOT	MIZ	MPR	MPRR	MPTOT	

SUBROUTINE INITI

INPUT	HITOT					
OUTPUT	AITIN	ERR	FIZ	HFINIT	HIFZ	MIZ

SUBROUTINE MAIN

INPUT	FILE13	NCASE	NCASES	NTAPE
OUTPUT	NCASE	NPRINT		

SUBROUTINE PRESET

OUTPUT	LIST1	NCARD	NCASES	NR	NLEWIS	NPLOT	NSCARD	NSI
	NSTAPE	NTAPE						

SUBROUTINE PRTI

INPUT	NCASE							
OUTPUT	COEINT	CSCOEF	I	L	LIST1	HITOT	NCARD	NCASES
	NCOUT	NF	NLEWIS	NPLOT	NSCARD	NSI	NSTAPE	NTAPE
	SII							

C-4

SUBROUTINE R8ST5B

INPUT	ABTOT	AKR	AMW	AMWG	AT	CSCDEF	CSTAR	CSTR
	DELF	DPHOT	GAMA	GAMAG	GAMASQ	GNOT	I	NCSTR
	NPH	PM	PHST	PON	PRESS	RB	STOYST	ICOMB
	TIMCK2	TIME	TIMEPH	TO	TPR	VCH	VCN	VFH
	VFH	VOLUME	VP					
OUTPUT	AKRST	DPHOT	GAMASQ	I	R	RB	TIMCK2	VOLUME

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SRB-111D PERFORMANCE PREDICTION PROGRAM

SUBROUTINE RBVSUB

INPUT AKG AKR AKU
OUTPUT ICHN

SUBROUTINE INPUT

INPUT	A	CASE	COEINT	CONT	CSCOE	END	I	IBM
	IDN	INPUT1	LEWIS	LIST1	HITOT	NGARD	NCASE	NCASES
	NF	NIBFLG	NIBM	NIBOUT	NIDN	NL	NLEWIS	NOUT
	NPLOT	NBCARD	NSI	NSTAPE	NTAPE	NWRIDH	SII	STATIC
	YTITLE							
OUTPUT	A	HEADER	I	NCOUT	NIBM	NIBOUT	NIDN	NL
	NOUT	NWRIDH	TITLE					

SUBROUTINE AIBSUB

INPUT	AMPN	AP	APHI	CAA	CBB	CC	DELTA	DLTHP
	DWDOT	GAMA	GNOT	IE	III	KDUMP	P	PBAR
	PH	PMI	PHAX	PHIN	PTMP	R	RAD	STFLAG
	I	TEMP1	TEMP6	TIME	TO	TTMP	U	UT
	UTMP	WDOT	WDOT1	XMBAR				
OUTPUT	AMACH	AMPH	AR	APHI	CAA	CBB	CC	DELTA
	DLTHP	DWDOT	IE	III	P	PBAR	PD	PH
	PMIN	PTMP	R	RAD	T	TEMP1	TEMP6	TTMP
	U	UTMP	WDOT	WDOT1	XMBAR			

SUBROUTINE CONV

INPUT	AKRHLD	AKRST	CLOPS	DEED	DIFAB	DIFAKR	DIS	DISB
	KDUMP	NAKRST	PCTAB	PCTABX	TIME	WD	WDB	WDOT
OUTPUT	AKRHLD	AKRST	DEED	DIFAB	DIFAKR	DIS	DISB	PCTAB
	PCTABX	TIMCK1	WD	WDB	WDOT			

SUBROUTINE SUBSON

INPUT	AEE	AENT	AENTAS	AEXAS	AIA	AIB	A2A	CBETA
	DELT	GAMA	GNOT	IOPT	ITER	MBETA	MDBETA	MDIB
	HEX	PA	PBETA	PMA	PHAZ	PON	PONC	PRCRIT
	PIA	PIAT	PIB	R	STO	SUBS1	SUBS2	TBETA
	THA	TO	UBETA	UMA	UIA	UIB	VGA	VGAZ
	WDOT							
OUTPUT	AENTAS	AEXAS	CBETA	ICHOKE	ITER	HEX	PBETA	PON
	PONC	PONZ	PRCRIT	STO	TBETA	UBETA	UMA	

SUBROUTINE DATA

SRB-111D PERFORMANCE PREDICTION PROGRAM

SUBROUTINE ENDC5B

INPUT	AER	ALFE	ALFEM	ALITBE	AOEM	BE	DELH	DE1
	DLRF	HEO	HER	HE1	HE2	HSUBMG	NEND	NSUBHG
	PI	RADIAN	RE1	RE2	RF	R1	TEMP1	TEMP2
	TEM1	TEM2	TEM3	TEM4	TEM5	VCE	VCNA	
OUTPUT	AER	ALFE	ALFEM	ALITBE	AOEM	BE	CAE	CBE
	CCCE	CCVE	CDCE	CDVE	CECE	CEVE	DELH	DELL
	DE1	HEO	HER	HE1	HE2	IER	NEND	RE1
	RE2	TAU	TAUEO	TAUE1	TEMP1	TEMP2	TEM1	TEM2
	TEM3	TEM4	TEM5	VCE	VCNA	VCNB	VFE0	

SUBROUTINE IBMOUT

INPUT	ABSLOT	ABTOT	AIBCYL	AIPCYL	AITVAC	AJBB	AJBHED	AJBNOZ
	AJPHEQ	AJPNOZ	AJPP	AMW	ANN	AOMCYL	AT	A1
	A2	CFOL	CGCYL	DELF	DELT	DELTSV	FVAC	FVACX
	GNUT	HEO	I	ICHN	IE	IIS	J	J
	KPRNT	N1	NSLOT	NSUBHG	PON	PRIC	PRTFLG	PTIME
	PTIMSV	R	SCUR	TEMP	TEMP1	TEMP2	TIME	TSLOTA
	TSLOTF	VP	VFCYL	VFH	VFN	WF	XBAR1H	XBH
	XBN	ZCALC						
OUTPUT	A	ABTOT	AIBCYL	AIPCYL	AITVAC	AJBB	AJBHED	AJBNOZ
	AJPHEQ	AJPNOZ	AJPP	APA	APF	BSLTA	BSLTF	CGCYL
	DELTSV	DWDT5	DWSLTA	DWSLTF	FVAC	FVACX	I	IIS
	IOUT	J	K	KPRNT	L	NIP1	NIP2	POA
	POF	PRNT	PSA	PSF	PTIME	PTIMSV	RBSLTA	RBSLTF
	SCUR	SKA	SKF	TEMP	TEMP1	TEMP2	TERM	TIME
	TSA	TSF	TSLOTA	TSLOTF	UA	UF	VFCYL	WSLOTD
	WSLOT1	XBAR1H	XBN	XBN	ZCALC			

SUBROUTINE HOUTSB

INPUT	AINCIN	DELDI	DELT	DT	DTINT	ER	ERBAR	EREXP
	I	ICHN	IE	IK	KPLANE	NDT	P1	PON
	PONBAR	STFLAG	TDELDI	TIME	TIMEDT	WDOT		
OUTPUT	AINC	AINCX	AICY	AT	DELDI	DT	ER	I
	IE	III	IIJ	IK				

SNB-111D PERFORMANCE PREDICTION PROGRAM

SUBROUTINE NSCE

INPUT	AAAA	AAAB	AENT	AMW	AMWG	ANZ	ANZR	APOINT
AR	AT	AIA	AIB	AZA	AZB	BINT	CBETA	
CIB	DELF	DELT	DT	DWDOT	DWDOTA	DWDOT	UWDTA	
GAMA	GAMAG	GNOT	ICHOKE	IUPT	IPASS	IS	ITPIB	
ITP2B	ITIB	J	KPLANE	MBETA	MOBETA	MDIB	MIB	
NCSTR	NI	NP1B	NP2B	NP3B	NP4B	NP5B	P	
PA	PBETA	PI	PHA	PHAZ	PHB	PHBZ	PO	
PON	PRABN	PRABO	PRESS	PTMP	PIA	PIAT	P1B	
P1BC	P1BG	P1BO	P1BT	P2BT	P2OLD	R	KB	
RBZ	RBIA	RDIB	RD2A	RD2B	RHOTMP	RHO1B	SIRATC	
SLOPE	T	TBETA	TCOMB	TEMP	TERM1	TERM2	THETEX	
TIME	TIMEZ	TMA	TMB	TO	TRSUB	TTMP	TIA	
TIB	TIBC	TIBG	TIBO	U	UBETA	UHA	UMB	
UTMP	UIA	UIB	VCNA	VCNB	VFNA	VFNB	VGA	
VGAZ	VGB	VGBZ	VNOZ5B	WDOT				
OUTPUT	AENT	AMACH	ANZ	ANZR	AP	AR	AT	AIA
AZA	BINT	CBETA	CIB	DWDOT	DWDOTA	DWDOTB	DWDOT	
DWDOTA	DWDOTB	ICHN	IPASS	IS	ITPIB	ITP2B	ITIB	
J	MOBETA	MDIB	MIB	P	PBETA	PHA	PHAZ	
PHB	PHBZ	PO	PON	PRABN	PRABO	PTMP	PIA	
PIAT	P1B	P1BC	P1BG	P1BO	P1BT	P2BT	P2OLD	
R	RB	RBZ	RDIA	RDIB	RD2A	RD2B	RHOTMP	
RHO1B	SIRATC	SLOPE	T	TBETA	TEMP	TERM1	TERM2	
THETEX	TIMEZ	TMA	TMB	TTMP	TIA	TIB	TIBC	
TIBG	TIBO	U	UBETA	UHA	UMB	UTMP	UIA	
UIB	VGA	VGAZ	VGB	VGBZ	WDOT			

SUB-111D PERFORMANCE PREDICTION PROGRAM

SUBROUTINE SLOT

INPUT	ABSLT	ABSLTA	ABSLTF	ACCEL	AFF	AFHI	AINCHI	AINCW
AMACH	AMINI	AMPN	ANSQ	AP	APHI	DELF	DELT	
OP	DY	DVDT	DWDT	DWSLTA	DWSLTF	E1	E2	
GAMA	GNOT	ICOUNT	IIS	ISPI	ISR	ISI	IS2	
ITER	KDUMP	NI	OOPS	PA	PBAR	PD	PDX1	
PDX2	PDY	PDY1	PHI	PI	PO	PSA	PSAPR	
PSF	PSFPR	R	RBSLOT	RF	RFHI	RSLOTA	RSLOTF	
SCUR	SLTBKN	STFLAG	T	TEMPA	TE1	TE2	TIME	
TO	TS	TSA	TSF	TSLOTA	TSLOTF	TX1	TX2	
TY1	U	UHAX	UTHP	V	WDOY	WDOTD	WDOTSD	
WDOTSI	XMBAR	ZCALC	ZERODV					
OUTPUT	ABSLT	ABSLTA	ABSLTF	AMACH	AMPN	ANSQ	APA	APF
BSLTA	DELTA	DP	DT	DVDT	DWDT	DWDT5	DWSLTA	
DWSLTF	E1	E2	ICHN	ICOUNT	IE	III	IIJ	
IIS	ISPI	ISH	ISI	IS2	ITER	OOPS	P	
PBAR	PD	PDX1	PDX2	PDY	PDY1	PDY2	PO	
POA	PDF	PSA	PSF	R	RBSLTA	RBSLTF	SLTFLG	
Y	TEHPA	TE1	TE2	TS	TSA	TSF	TX1	
TX2	TY1	TY2	U	UA	UF	UHAX	UTHP	
V	WDOT	WDOTD	WDOTSD	WDOTSI	WSLOTD	WSLOTI	XMBAR	

SUBROUTINE IBM

INPUT	I	J	NCONT				
OUTPUT	ABHD	ABN	ACCEL	AFX	AFY	AINCIN	AITST
AKR	AKRH	AKHN	AKRST	AKSLOT	AKU	ALPPL	ANIBO
ANITW	ANN	ANO	APORT	BRNOUT	BYAOE	CFOL	CKTIME
CRP	CRT	CRW	DELH	DELTSP	DELTSS	DELTST	DELTTO
DHI	DWSLTA	DWSLTF	GNOT	HHR	I	ICHN	III
IIJ	IIS	ISI	IS2	I2	J	KDUMP	KPLANE
NACCEL	NAKFT	NAKEND	NAKR	NCH	NCONT	NCSCOE	NCSTR
NBT	NEPS	NGEO	NGEOHD	NGEOMN	NI	NPA	NPH
NSCTHS	NSLOT	NSUBMG	NTAB	NTABE	PA	PCTAB	PEPO
PI	PONBAR	PRTFLG	PST	PTIME	RADIAN	RBSLTA	RBSLTF
RF	RPL	SA	SB	SIRATC	SLTBRN	SLTFLG	SLTPTI
STDYST	SYFLAG	TAUADJ	TAUHD	TAUN	TWETEX	TIMAX	VCHINP
TIMPT2	TOFLAG	TSF	TSLOTA	TSLOTF	TST	UF	
VCHINP	VPNO	VNOZSB	WFACI				

SRB-111D PERFORMANCE PREDICTION PROGRAM

SUBROUTINE INPT

INPUT	ABHD	ABN	ABNA	ABNB	ACCELT	AINCIN	AITST	AKG
	AKR	AKRH	AKRN	AKSLOT	AKU	ALPI	ALPPL	ALPSEC
	AMWG	AMTW	ANN	ANO	AN2	AOHM	AONM	APORT
	APRTSC	BM	BLKTEM	BN	BTAOE	CKDUMP	CH	CRP
	CRT	CRM	CSCOE	CSTAR	CSTR	DE	DELF	DELH
	DELTSP	DELTSS	DELTST	DELTTO	DELZ	DH1	DLRF	DN1
	DT	DUMX	DUMY	END	EPCA	EPCN	ERBAR	EREXP
	GAMA	GAMAG	HCO	HHR	HSUBMG	I	IBDATA	IBN
	IDISP	IN	J	KDUMP	KPLANE	N	NACCEL	NAKAFT
	NAKEND	NAKHED	NAKR	NCASE	NCH	NCONT	NCSCOE	NCSTR
	NDI	NEPS	NGEO	NGEOHD	NGEOMN	NIBFLG	NIBOUT	NPA
	NPH	NPSUB	NSCTRS	NSUBMG	NTAB	PA	PCTAB	PHI
	PHST	PMOIND	PMOIN	RONBAR	PRESS	PRTFLG	PRTISP	PRTISS
	PRTIST	PRTITO	PST	PTIME	H	REFTEM	RF	RHOTOL
	RI	RMOIND	RMOIN	RPL	SA	SB	SECN	SIGMAP
	STRATC	SLTBKN	STDYST	STFLAG	TABD	TAB1	TAUADJ	TAUAFT
	TAUHD	TAUHED	TAUMNA	TAUMNB	TAUN	TAUNB	TAIB	TA2B
	TBLAKR	TOLCH	TBLPA	TCOMB	TDELDT	TEMAFT	TEMHED	THETEX
	TIMAKR	TIMAX	TIMEAC	TIMECH	TIMEDT	TIMEPA	TIMEPH	TIMEPS
	TIMPTI	TIMPT2	TO	TRSUB	TST	TXSUB	VCHINP	VCNINA
	VCHIND	VCHINP	VFHO	VFNO	VFNOA	VFNOD	WFACT	WFCOR
	WFTOL	X	XCGHD	XCGN				
OUTPUT	ALPSEC	APRTSC	DUMX	DUMY	I	J	KPLANE	N
	NIBOUT	RP	RI	SA	SB	SCUR	SECN	X

SUBROUTINE PRT7

INPUT	A	AAN	ABCYL	ABSLOT	ABTOT	AE	AHH	AIT
	AITIN	AITVAC	AITVIN	AMW	AP	AT	A2A	CSTAR
	DE	F	FI	FTDEL	FTVAC	FVAC	KPRNT	MIF
	HIR	HCARD	NI	NPLOT	NSCARD	NSTAPE	NSUBMG	NTAPE
	PH	PI	PON	PRNT	PTIME	RBZ	SPHOT	SPONDT
	SRMDTI	SRHVTI	SWOOTN	TAUZ	TERN	TIME	VF	VFCYL
	VFN	VFN	VP	VPH	VPN	WDOT	WOT	WF
	WFI	WGTOT	ZERODV					
OUTPUT	AAN	ABCYL	ABSLOT	ABTOT	AE	AEE	AHALFC	AHH
	AITVAC	AJBB	AJPP	AKRST	AMPN	AMW	ANLOPS	AN2
	AP	AT	A2A	CF	CFOL	CSTAR	DELF	EPG
	EPH	FI	FTDEL	FTVAC	GAMA	MIF	MIGN	HIR
	MITOT	MNCASE	MMGROS	HPIT	MTVC	NI	PEPO	PEPO
	PH	PON	PRNT	SPHOT	SPONDT	SRMDTI	SRHVTI	SWDOTN
	TERM	TERN	TGRAIN	TIME	TISP	VF	VFCYL	VFN
	VFN	VP	VPH	VPN	WDOT	WOT	WF	WGTOT
	WRD13	WRD4	XBARIH					

SUB-111D PERFORMANCE PREDICTION PROGRAM

SUBROUTINE XLIN

INPUT	A	B	K	N	X
OUTPUT	K	L	X	Y	

SUBROUTINE LOOKUP

INPUT	AANA	AANB	ABHD	ABN	ABNA	ABNB	ALPPL	ALPRP
	ALPSEC	FACTOR	I	ITAU	I2	K	KPLANE	LH
	LH1	LM	LN1	N	NGEO	NGEOMD	NGEOMN	NI
	NSCTRS	NSUBMG	RF	RI	RPL	SECN	TAU	TAUHD
	TAUMNA	TAUN	TAUNB	IAURPL	TAUWRP	TAUZ	TAUB	TA2B
	TMHD	TMN						
OUTPUT	AAN	AANA	AANB	AHM	AJBNOZ	AJBNZA	AJPNOZ	AJPNZA
	ALPRP	ALPSEC	AIB	A2B	FACTOR	I	ITAU	I2
	J	K	LH	LH1	LN	LN1	N	SECN
	TAU	TMHD	TMN	XBN	XBNA			

SUBROUTINE RBSUB

INPUT	AINCW	AXG	AKR	AKRADJ	AKRST	AKRTHP	AKR2	AKR3B
	AKK4	AXSLOT	AKU	BLKTEM	BOE	BTAD	BIE	DELF
	DELTA	DELNL	G	GCR	GRTEMP	HHR	HRB	ICHN
	IEND	III	IS	I2	NAKFT	NAKHED	NI	NSCTRS
	NSUBMG	NT	NTAB	NTEST4	P	PA	PD	PH
	R	RB	RBHI	REFTEM	SECN	SIGMAP	SLTFLG	STDYST
	STFLAG	TABD	TAB1	TAUFT	TAUHD	TAUWD	TAUZ	TEMAFT
	TEHED	TEMP1	TEMP2	THE	TOFLAG	U	UCR	
OUTPUT	AKRADJ	AKRTHP	AKR2	AKR3B	AKR4	DELWL	G	GCR
	GRTEMP	HHR	HRB	I2	NT	NTEST4	P	R
	RB	RBSLOT	SECN	TEMP1	TEMP2	THE	UCR	

SUBROUTINE TISUB

INPUT	AINC	AINCA	AINCY	AIT	AITST	AMINI	ANIBO	ANITW
	BRNOUT	DEL	DELT	DELTSP	DELTSS	DELTST	DELTTO	GO130
	GO210	HALT	HCO	I	IIJ	IIJ	II5	I2
	JUMP	NBACK	NI	NSCTRS	NSLOT	NSUBMG	PON	PRIC
	PRTISP	PRTISS	PRTIST	PRTITO	PSA	PSF	PST	RBSLTA
	RBSLTF	RBZ	SECN	SECT	STDYST	STELAG	TAU	TAUMNA
	TAUMNB	TAUS	TAUT	TAUWD	TAUZ	TAU1	TAU2	TEMP3
	TEMP4	TEMP5	TEMP6	TEST	TIME	TIMPT1	TIMPT2	TST
	ZCALC							
OUTPUT	AINC	ANIBO	BRNOUT	DEL	DELT	GO130	GO210	HALT
	I	IE	III	IIJ	II5	I2	JUMP	NBACK
	PRIC	PRNT	PSAPR	PSFPR	SECN	STDYST	TEMP	TAU
	TAUS	TAUT	TAUWD	TAUZ	TAU1	TAU2	TEMP	TEMP3
	TEMP4	TEMP5	TEMP6	TEST	TIME	TSLOTA	TSLOTF	

SRB-111D PERFORMANCE PREDICTION PROGRAM

SUBROUTINE AIBST

INPUT	ACCEL	ACCELT	AINCHI	AINCW	AMACH	AMPN	AMSQ	AP
	DPHI	CRP	CRT	DAP	DAPHI	DELT	DELTST	DELZ
	DP	DY	DWDOT	DWDT	EPCA	EPCN	EPS	EPSA
	EPSN	EI	GAMA	GNOT	HCO	ICHN	IE	IFLAG
	III	ITER	KDUMP	NACCEL	NEPS	NI	NTEST	PD
	PDPH	PDX1	PDX2	PDY	PDY1	PDY2	PH	PHI
	PIN	PMAX	POUT	R	RF	SLOPE	STDYST	STFLAG
	T	TEMP	TE1	TIME	TIMEAC	TIMECK	TIMEPS	TO
	TS	TX1	TY1	U	UMAX	UTMP	UTMPT	V
	VCN	VFN	VPR	VT	WDOT	WDOTD	WDOTI	ZERODV
OUTPUT	A	ACCEL	AMACH	AMPN	AMSQ	AP	CLOPS	DAP
	DAPHI	DEED	DELT	DELTA	DELZ	DP	DT	DWDOT
	DWDT	EPS	EI	E2	ICHN	IE	IFLAG	III
	ITER	NTEST	R	PCRIT	PD	PDPH	PDX1	PDX2
	PDY	PDY1	PDY2	PH	PH1	PIN	PHIN	POUT
	PRNT	R	SLOPE	T	TEMP	TE1	TE2	TIMECK
	TS	TX1	TX2	TY1	TY2	U	UMAX	UTMP
	V	VPR	WD	WDOT	WDOTD	WDOTI		

SUBROUTINE MNCN1

INPUT	AINCIN	ANAXD	ANI	ANO	AODM	AONM	BH	BN
	BTAOE	BYEBYE	DELZ	DH1	DN1	HCO	I	IERROR
	IIS	J	JJ	KPLANE	NCASE	NGEOHD	NGEOMN	NI
	NPSBM1	NPSUB	NSCTRS	NSLOT	NSUBMG	PI	RE1	RF
	RFOH	R1	RIDM	SA	SCUR	SLYBRN	TRSUB	TXSUB
	VCHINP	VENINA	VCNINB	VCNINP	VFE0	VFHO	VFNO	VNOZSB
	ZCALC							
OUTPUT	AFRPL	AJNC	AJNCIN	ALPRP	ALPSEC	ANI	ANODM	AOEM
	APRTSC	AX	AY	BE	BH	BTAOE	BYEBYE	DELT
	DELZ	DEI	HCO	I	ICHN	IERROR	IIS	J
	JJ	K	KPLANE	NEND	NI	NPSBM1	NSLOT	NTABE
	NTEST	NTEST4	PD	PDPH	PEP01	PRNT	RBZ	RF
	RFOH	RW1	R1	RIDM	RNI	SA	SB	SCUR
	TAU	TAURDP	TAUZ	UA	V	VCH	VCN	VCNA
	VCNB	VFHO	VNOZSB	VPR	WSLOTD	WSLOTI	ZCALC	

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SMB-IIID PERFORMANCE PREDICTION PROGRAM

SUBROUTINE MNCNNM

INPUT	AAN	AANA	AANB	ABCYL	ABHD	ABN	ABNA	ABNB
AFRPL	AFRPL	AFRPS	AHH	AHO	AINCIN	AKR	AKRH	AKRN
ALPRP	ALPRL	ALPSC	AMACH	AMINI	AMW	AMWG	ANLOPS	ANGAX
ANOBX	ANOBX	AP	APH	APORT	APORTN	APRTSC	APRTSC	AIB
BIGUN	BIGNOUT	CKDUMP	CH	CSCOE	CSTAR	CSTR	DELTA	DELTA
DELTA	DELTA	DELTS	DELTS	DWDOT	DWDOTB	DWDT	DWDTA	DWDTA
DWDTB	E	ERROR	GAMA	GAMAG	GNOT	I	ICHN	ICHN
IDP	IE	III	IIS	IOPT	IPLAN	IPLANE	IRP	IRP
IS	ITERH	IXP	IX2	I2	J	K	KDUMP	KDUMP
KPLANE	KPHI	L	LI	M	MIB	N	NCH	NCH
NCSTR	NI	NIM1	NIP2	NPA	NPH	NSCTRS	NSUBMG	NSUBMG
P	PA	PCTAB	PD	PDPR	PH	PHI	PI	PI
PO	POLD	PON	PRCRIT	PRESS	PIB	PIBT	R	R
RB	RBRPL	RBS	RBZ	RBZH	RBZN	RBZNB	KF	KF
RFIDP	RFI	RF2	RI	RIODP	RII	RI2	SCUR	SCUR
SECN	SYDST	STFLAG	SVALP	T	TAU	TAUADJ	TAURPL	TAURPL
TAUWR	TAUZ	TBLCH	TBLPA	TOMB	TEMP	THAX	TIME	TIME
TIMECH	TIMEPA	TIMEPH	TO	TOTEMP	TIB	U	UTMP	UTMP
UIB	V	VCH	VCHINP	VCH	VGNINP	VF	VFH	VFH
VFHO	VFHPH	VFN	VFNA	VFNB	VFNO	VFNOA	VFNOB	VFNOB
VPH	WDOT	WDOTD	XP	X1	X2	ZCALC	ZERODV	ZERODV
OUTPUT	AAN	AANA	AANB	ABCYL	ABTOT	AFRPL	AFRPS	AHH
AHO	AIBCYL	AINCW	AIPCYL	AKRHLD	ALPRP	AMACH	AMPN	AMPN
ANIBO	ANLOPS	ANOBX	ANOBX	ANOX	ANOCYL	AP	APH	APH
APHI	APORT	APRTSC	BIGUN	BIGNOUT	CKTIME	CLOPS	CLOPS	CLOPS
DELTA	DELTA	DTINT	DWDOT	DWDT	ERROR	I	ICHN	ICHN
IDP	IE	IEND	IFLAG	III	IIJ	IIS	IOPT	IOPT
IPLANE	IRP	IS	IS1	IS2	ITERH	IXP	IX2	IX2
I2	J	JUMP	K	KDUMP	KPLANE	KPHI	KRPLN	KRPLN
KRPH	KRPHI	L	LI	M	N	NBACK	NI	NI
NIM1	NIP1	NIP2	NSLOT	P	PCTABX	PD	PDPR	PDPR
PH	PHAX	PHIN	PO	POLD	PON	PRCRIT	PRNT	PRNT
R	RBRPL	RBS	RBZ	RBZH	RBZN	RBZNB	SLTFLG	SLTFLG
RFIDP	RFI	RF2	RIODP	RII	RI2	SECN	TEMP	TEMP
SVALP	T	TAU	TAURPL	TAUWDP	TAUWR	TAUZ	U	U
THCK1	THCK2	TIME	TO	TOFLAG	TOTEMP	TPR	U	U
UT	UTHP	VF	VFH	VFHPR	VFN	VFNA	VFNB	VFNB
VP	VPH	VPN	VPR	WDOT	WDOTD	XP	X1	X1
X2	YI							

SRU-111D PERFORMANCE PREDICTION PROGRAM

SUBROUTINE SETPH

INPUT	A	AGE	AINC	AINCIN	AINCX	AIT	ALAHN	AMBSS
AMBSU	AMINI	AMPN	ANLOPS	ANN	AN2	AT	CEHPC	CFC
CFC	CFOL	CLOPS	CH	CODET	CRW	CSTAR	DIS	E1
DE	DEED	DELF	DELLP	DELT	DELWF	EXPI	GP1	KPLANE
DISB	DT	DTINT	EPG	EPS	GHI	GNOT	PEPO	PHMAX
E2	F	FX	GAM	GAMA	GHI	KDUMP	PRNT	SDIS
HCO	I	IE	IFLAG	ITER	J	PA	TEMP1	TX
HI	NMAR	NPH	NSLOT	NSUBMG	P	PHI	VFPP	WFTOL
PEPOX1	PEPOX2	PEPOY	PLPOY1	PLPO1	PH	PONX		
PHOLD	PHX	PI	PHAX	PHIN	PON	SCUR		
PSOPO	R	RF	REI	RFX	RHOTOL	T		
SPHDT	SPONDT	STFLAG	SUWHF	SUWHFZ	SUWHFZ	TSS		
TEMP6	TIME	TIMEPH	TIMEW	TIMEZZ	TO	TX		
VCH	VCH	VE	VF	VFH	VFINT	VFN		
WD	WDB	WDOT	WDOTX	WF	WFACT	WFCOR		
WGPORT	ZCALC							
OUTPUT	AGE	AINC	AINCX	AIT	ALAHN	AMBSS	AMBSU	AMPN
AMBSU	AMINI	AMPN	ANLOPS	ANN	AN2	AT	CEHPC	CFC
CFC	CFOL	CLOPS	CH	CODET	CRW	CSTAR	DIS	E1
DE	DEED	DELF	DELLP	DELT	DELWF	EXPI	GP1	KPLANE
DISB	DT	DTINT	EPG	EPS	GHI	GNOT	PEPO	PHMAX
E1	E2	F	FX	GAM	GAMA	GHI	KDUMP	PRNT
IE	IFLAG	ITER	J	NMAR	ON	P	PA	PH
PEPO	PEPOX1	PEPOY	PEPOY1	PEPOY2	PEPOY2	PEPO1	PSOPO	SUWHFZ
PHMAX	PHOLD	PHX	PHAX	PHIN	PON	PONX	SUWHFZ	SUWHFZ
RF	RFX	SDIS	SPHDT	SPONDT	SUWHF	TX	VE	VFINT
TEMP1	TEMP6	TIMEW	TIMEZZ	TSS	TX	VE	VFINT	WFTOL
VFPP	VFNEB	VIS	WD	WDB	WDOT	WDOTX	WF	
WFACT	WFI	WGTOT						

SUBROUTINE PARTON

INPUT	AB	AC	AD	AF	AH	AINCHI	AINCW	AINCX
AINCY	ALLPX	ALLPY	ALPHA	ALPPL	AO	AR	AU	ISS
GD	I	IAFT	IFLS	IFW	III	IS	ISS	RF
KRPN	NCX	NGEO	RFX	NSLOT	PR	QR	TAUMHI	TS
RFHI	RPHIS	RFS	TAUWDP	TAUZ	SCUR	TA	TS	
TAUMSL	TAUMW	TAUSLT	ZCALC		THETA			
TS	UR							
OUTPUT	AB	AC	AD	AF	AH	AINCHI	AINCHS	AINCW
AINCWS	ALLPX	ALLPY	ALP	ALPHA	ALPHI	AD	AR	ISS
AU	DELZ	GO	I	IAFT	IFLS	IFW	III	QR
IIIH	IPDNFL	IS	ISS	NCX	NCY	PR	TAUMHI	TIME
RF	RPHI	RPHIS	RFS	TA	TAUMHI	TAUMW		
TS	TS	TS	UR	ZCALC				

SRB-1110 PERFORMANCE PREDICTION PROGRAM

SUBROUTINE SEG SUB

INPUT	ABCYL	AFF	AFFTEM	AFRPS	AFX	AFXTM	AFY	AFYTEM
	AINCHI	AINCHS	AINCIN	AINCN	AINCWS	AINCX	AINCY	ALP
	ALPBOA	ALPBOY	ALPHI	ALPHIS	ALPPL	ALPS	ALPSEC	ALPTM
	ALPX	ALPY	AMACH	AP	APHI	APHTM	APORT	APRTSC
	APT	ARTEM	APX	APY	DELF	DELT	DELTA	DELZ
	DELZS	DELZT	DUMX1	DUMX2	DWDOT	DWDTS	DWSLTA	DWSLTF
	DWTEM	GAMA	I	ICHN	IE	IFLS	IFLSEC	III
	IIJ	IS	IJ	IPBNFL	IPBNFS	IS	ISAV	IS2
	I2	ICUMP	KP	KPLANE	KPI	KRPN	L	LL
	NDUMX	NGEO	NI	NSCTKS	NSLOT	NTEST	P	PCTAB
	PD	PO	PRNT	RB	RUHI	RBZ	RF	RFHI
	RFI	RFS	RFX	RFY	RPL	SCUR	SECN	SLTFLG
	STOYST	STFLAG	T	TAU	TAUDUM	TAUMAX	TAUMHI	TAUMW
	TAUMX	TAUMY	TAUS	TAUWDP	TAUWRP	TAUZ	TEMP	TEMP1
	THETA	THOLD	TIME	TO	U	VF	VFI	VP
	VPT	VT	VT1	VT2	VT3	WDOT	WGPORT	ZCALC
OUTPUT	ABCYL	ABSLOT	AFF	AFFTEM	AFHI	AFX	AFXTM	AFY
	AFYTEM	AINCHI	AINCHP	AINCW	AINCWP	AINCX	AINCY	ALP
	ALPBOY	ALPHI	ALPHIS	ALPS	ALPTM	ALPX	ALPY	AMACH
	AP	APHI	APHTM	APT	APTEM	APX	APY	CUR
	DELZ	DELZS	DELZT	DUMX1	DUMX2	DWDOT	DWTEM	I
	ICHN	IE	IFLS	IFLSEC	III	IIJ	II5	IJ
	IPBNFL	IPBNFS	IS	ISAV	IS1	IS2	I2	KP
	KPI	L	LL	NDUMX	NTEST	P	PO	PRNT
	RBHI	R24	RF	RFHI	RFX	RFY	RSLOTA	RSLOTF
	S	SCUR	SECN	SLTFLG	TAU	TAUDUM	TAUMAX	TAUMHI
	TAUMW	TAUMX	TAUMY	TAUS	TEMP	TEMP1	THETA	THOLD
	TOFLAG	THLOTA	TSLOTF	VF	VFI	VR	VPT	VT
	VT1	VT2	VT3	WGPORT	ZCALC			

SRB-111D PERFORMANCE PREDICTION PROGRAM

A

INPUT	INPUT	PRT7	XLIN	SETPH
OUTPUT	INPUT	IBMOUT	AIBST	

AAN

IN PARMG	COMMON	IN	AIBST	IBMOUT	LOOKUP	MNCHN4	PRT7
			RBSTSB	SETPH	TISUB		
INPUT	PRT7	MNCHN4					
OUTPUT	PRT7	LOOKUP	MNCHN4				

AANA

IN PARMJ	COMMON	IN	LOOKUP	MNCHN4	NSCE
INPUT	NSCE	LOOKUP	MNCHN4		
OUTPUT	LOOKUP	MNCHN4			

AANB

IN PARMJ	COMMON	IN	LOOKUP	MNCHN4	NSCE
INPUT	NSCE	LOOKUP	MNCHN4		
OUTPUT	LOOKUP	MNCHN4			

AB

INPUT	PARTBN
OUTPUT	PARTBN

ABCYL

IN COMA	COMMON	IN	AIBST	AIBSUB	IBM	IBMOUT	INENT
			MNCHN1	MNCHN4	MODTSB	NSCE	PARTBN
			PRT7	RBSTSB	RBSUB	SEGSUB	SETPH
			SLOT	SUBSON	T&SUB		
INPUT	PRT7	MNCHN4	SEGSUB				
OUTPUT	PRT7	MNCHN4	SEGSUB				

ABHD

IN INPUT4	COMMON	IN	IBM	INPT	LOOKUP	MNCHN1	MNCHN4
			NSCE	PARTBN	SEGSUB		
INPUT	INPT	LOOKUP	MNCHN4				
OUTPUT	IBM						

ABN

IN INPUT4	COMMON	IN	IBM	INPT	LOOKUP	MNCHN1	MNCHN4
			NSCE	PARTBN	SEGSUB		
INPUT	INPT	LOOKUP	MNCHN4				
OUTPUT	IBM						

SRB-IIID PERFORMANCE PREDICTION PROGRAM

ABNA

IN PARHAD COMMON IN INPT LOOKUP MNCHN4
INPUT INPT LOOKUP MNCHN4

ABNB

IN PARHAD COMMON IN INPT LOOKUP MNCHN4
INPUT INPT LOOKUP MNCHN4

ABSL0T

IN PARHZ COMMON IN IBMOUT MNCHN4 NSCE PRT7 SEG SUB
SLOT
INPUT IBMOUT SLOT PRT7
OUTPUT SLOT PRT7 SEG SUB

ABSLTA

IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
INPUT SLOT
OUTPUT SLOT

ABSLTE

IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
INPUT SLOT
OUTPUT SLOT

ABTOT

IN PARHG COMMON IN AIBST IBMOUT LOOKUP MNCHN4 PRT7
RBSTSB SETPH TISUB
INPUT RBSTSB IBMOUT PRT7
OUTPUT IBMOUT PRT7 MNCHN4

AC

INPUT PARTBN
OUTPUT PARTBN

ACCEL

IN COMA COMMON IN AIBST AIBSUB IBM IBMOUT INERT
MNCHN1 MNCHN4 MOUTSB NSCE PARTBN
PRT7 RBSTSB RB SUB SEG SUB SETPH
SLOT SUBSON TISUB
INPUT SLOT AIBST
OUTPUT IBM AIBST

ACCELT

IN INPT COMMON IN AIBST IBM INPT
INPUT INPT AIBST

SRB-111D PERFORMANCE PREDICTION PROGRAM

AD

INPUT PARTBN
OUTPUT PARTBN

AE

INPUT PR7
OUTPUT PR7

AEE

IN COMN COMMON IN MNCHN1 PRT7 SETPH SUBSON
INPUT SUBSON SETPH
OUTPUT PR7 SETPH

AENT

IN PARMAK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

AENTAS

INPUT SUBSON
OUTPUT SUBSON

AER

INPUT ENDCSB
OUTPUT ENDCSB

AEAAS

INPUT SUBSON
OUTPUT SUBSON

AF

INPUT PARTBN
OUTPUT PARTBN

AFF

IN COMT COMMON IN ENDCSB IBHOUT MNCHN1 MNCHN4 PRT7
SEGSUB SLOT T1SUB
INPUT SLOT SEGSUB
OUTPUT SEGSUB

AFFTEM

INPUT SEGSUB
OUTPUT SEGSUB

SRB-1110 PERFORMANCE PREDICTION PROGRAM

AFHI
 IN COMK COMMON IN IBM IBMOUT SEG SUB SLOT TISUB
 INPUT SLOT
 OUTPUT SEG SUB

AFRPL
 IN PARK COMMON IN LOOKUP MNCHN1 MNCHN4
 INPUT MNCHN4
 OUTPUT MNCHN1 MNCHN4

AFRPS
 IN WORK47 COMMON IN INPT LOOKUP MNCHN1 MNCHN4 SEG SUB
 INPUT MNCHN4 SEG SUB
 OUTPUT MNCHN4

AFX
 IN DUMYP COMMON IN IBM MNCHN4 PARTBN SEG SUB
 INPUT SEG SUB
 OUTPUT IBM SEG SUB

AFXTEH
 INPUT SEG SUB
 OUTPUT SEG SUB

AFY
 IN DUMYP COMMON IN IBM MNCHN4 PARTBN SEG SUB
 INPUT SEG SUB
 OUTPUT IBM SEG SUB

AFYTEH
 INPUT SEG SUB
 OUTPUT SEG SUB

AGI
 INPUT MAGH

AH
 INPUT PARTBN
 OUTPUT PARTBN

AHALFC
 OUTPUT PRY7

SRB-IIID PERFORMANCE PREDICTION PROGRAM

AHH

IN COMB COMMON IN IBMOUT LOOKUP MNCHN4 MODTSB PRT7
 INPUT PRT7 MNCHN4
 OUTPUT PRT7 LOOKUP MNCHN4

AHO

INPUT MNCHN4
 OUTPUT MNCHN4

AIBCYL

IN PARN1 COMMON IN IBMOUT MNCHN4 PRT7
 INPUT IBMOUT
 OUTPUT IBMOUT MNCHN4

AINC

IN WORKA COMMON IN AIBST ENDCSB MNCHN1 MODTSB PARTBN
 INPUT TISUB SETPH
 OUTPUT MODTSB TISUB MNCHN1 SETPH

AINCHI

IN COMA COMMON IN AIBST AIBSUB IBM IBMOUT INERT
 MNCHN1 MNCHN4 MODTSB NSCE PARTBN
 PRT7 RBSTSB RASUB SEGSUB SETPH
 INPUT SLOT AIBST PARTBN SEGSUB
 OUTPUT PARTBN SEGSUB

AINCHP

OUTPUT SEGSUB

AINCHS

IN BLK029 COMMON IN MNCHN4 PARTBN SEGSUB
 INPUT SEGSUB
 OUTPUT PARTBN

AINCIN

IN INPUT1 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
 MODTSB PARTBN RB SUB SEG SUB SETPH
 INPUT MODTSB INPT MNCHN1 MNCHN4 SETPH
 OUTPUT IBM MNCHN1

SUB-IIID PERFORMANCE PREDICTION PROGRAM

AINCW

IN PARM COMMON IN AIBST AIBSUB CONV IBH IBMOUT
INERT MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSTSB RB SUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT SLOT RB SUB AIBST PARTBN SEGSUB
OUTPUT MNCHN4 PARTBN SEGSUB

AINCWP

OUTPUT SEGSUB

AINCWS

IN BLK029 COMMON IN MNCHN4 PARTBN SEGSUB
INPUT SEGSUB
OUTPUT PARTBN

AINCX

IN COMM COMMON IN MNCHN4 MODTSB PARTBN SEGSUB SETPH
TISUB
INPUT TISUB SETPH PARTBN SEGSUB
OUTPUT MODTSB SETPH SEGSUB

AINCY

IN COMM COMMON IN MNCHN4 MODTSB PARTBN SEGSUB SETPH
TISUB
INPUT TISUB PARTBN SEGSUB
OUTPUT MODTSB SEGSUB

AIPCYL

IN PARM1 COMMON IN IBMOUT MNCHN4 PRT7
INPUT IBMOUT
OUTPUT IBMOUT MNCHN4

AIT

IN PARM6 COMMON IN AIBST IBMOUT LOOKUP MNCHN4 PRT7
RBSTSB SETPH TISUB
INPUT PRT7 TISUB SETPH
OUTPUT SETPH

AITIN

IN BLK016 COMMON IN INERT INITI PRT7
INPUT INERT PRT7
OUTPUT INERT INITI

SRB-1110 PERFORMANCE PREDICTION PROGRAM

AITST

IN INPUT COMMON IN IBM INPT TISUB
 INPUT INPT TISUB
 OUTPUT IBM

AITVAC

IN COM1 COMMON IN IBMOUT PRT7
 INPUT IBMOUT PRT7
 OUTPUT IBMOUT PRT7

AITVIN

IN BLKO16 COMMON IN INERT INITI PRT7
 INPUT PRT7
 OUTPUT INERT

AJBB

IN PARMO COMMON IN IBMOUT PRT7
 INPUT IBMOUT
 OUTPUT IBMOUT PRT7

AJBHED

IN COMB COMMON IN IBMOUT LOOKUP MMCHN4 MODTSB PRT7
 SETPH
 INPUT IBMOUT
 OUTPUT IBMOUT

AJBNOZ

IN COMB COMMON IN IBMOUT LOOKUP MMCHN4 MODTSB PRT7
 SETPH
 INPUT IBMOUT
 OUTPUT IBMOUT LOOKUP

AJBNZA

OUTPUT LOOKUP

AJPHED

IN COMB COMMON IN IBMOUT LOOKUP MMCHN4 MODTSB PRT7
 SETPH
 INPUT IBMOUT
 OUTPUT IBMOUT

SAB-1110 PERFORMANCE PREDICTION PROGRAM

AJPN02
 IN COMB COMMON IN IBMOUT LOOKUP MNCHN4 MODTSB PRT7
 SETPH
 INPUT IBMOUT
 OUTPUT IBMOUT LOOKUP

AJPNZA
 OUTPUT LOOKUP

AJPP
 IN COMB COMMON IN ENDCSB IBMOUT MNCHN1 MNCHN4 PRT7
 SEGSUB SLOT TISUB
 INPUT IBMOUT
 OUTPUT IBMOUT PRT7

AKG
 IN INPUT COMMON IN IBM INPT MNCHN4 RBSTSB RB5UB
 RBVSUB SEGSUB
 INPUT RBVSUB INPT RB5UB
 OUTPUT IBM

AKR
 IN INPUT COMMON IN IBM INPT MNCHN4 RBSTSB RB5UB
 RBVSUB SEGSUB
 INPUT RBSTSB RBVSUB INPT RB5UB MNCHN4
 OUTPUT IBM

AKRADJ
 IN COMB COMMON IN MNCHN4 RBSTSB RB5UB
 INPUT RB5UB
 OUTPUT RB5UB

AKRH
 IN INPUT COMMON IN IBM MNCHN4 RBSTSB
 INPUT MNCHN4
 OUTPUT IBM

AKRH
 INPUT INPT

AKRHLD
 IN DUMYG COMMON IN CONV MNCHN4
 INPUT CONV
 OUTPUT CONV MNCHN4

SRB-111D PERFORMANCE PREDICTION PROGRAM

AKRN

IN INPUTD COMMON IN IBM MNCHN4 RBSTSB
 INPUT MNCHN4
 OUTPUT IBM

AKRN

INPUT INPT

AKHST

IN PARMF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
 INERT MNCHN4 MODTSB NSCE PARTBN
 PRT7 RBSTSB RBSUB SEGSUB SETPH
 SLOT SUBSON TISUB
 INPUT CONV RBSUB
 OUTPUT RBSTSB CONV IBM PRT7

AKHTMP

INPUT RBSUB
 OUTPUT RBSUB

AKR2

INPUT RBSUB
 OUTPUT RBSUB

AKR3B

INPUT RBSUB
 OUTPUT RBSUB

AKR4

INPUT RBSUB
 OUTPUT RBSUB

AKSLOT

IN INPUTE COMMON IN IBM INPT MNCHN4 RBSTSB RBSUB
 RBVSUB SEGSUB
 INPUT INPT RBSUB
 OUTPUT IBM

AKU

IN INPUTE COMMON IN IBM INPT MNCHN4 RBSTSB RBSUB
 RBVSUB SEGSUB
 INPUT RBVSUB INPT RBSUB
 OUTPUT IBM

SRD-111D PERFORMANCE PREDICTION PROGRAM

ALAMN

INPUT SEYPH
OUTPUT SEYPH

ALFE

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB

ALFEM

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB

ALITBE

INPUT ENDCSB
OUTPUT ENDCSB

ALLPX

INPUT PARTBN
OUTPUT PARTBN

ALLPY

INPUT PARTBN
OUTPUT PARTBN

ALP

IN PARMO COMMON IN PARTBN SEGSUB
INPUT SEGSUB
OUTPUT PARTBN SEGSUB

ALPBOX

INPUT SEGSUB

ALPBOY

INPUT SEGSUB
OUTPUT SEGSUB

ALPHA

INPUT PARTBN
OUTPUT PARTBN

SRB-111D PERFORMANCE PREDICTION PROGRAM

ALPH1

IN DUMP COMMON IN IBM MNCHN4 PARTBN SEGSUB
INPUT SEGSUB
OUTPUT PARTBN SEGSUB

ALPH15

INPUT SEGSUB
OUTPUT SEGSUB

ALPI

INPUT INPT

ALPPL

IN INPUT4 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
NSCE PARTBN SEGSUB
INPUT INPT LOOKUP PARTBN SEGSUB
OUTPUT IBM

ALPRP

IN PARM4 COMMON IN LOOKUP MNCHN1 MNCHN4
INPUT LOOKUP MNCHN4
OUTPUT LOOKUP MNCHN1 MNCHN4

ALPS

INPUT SEGSUB
OUTPUT SEGSUB

ALPSEC

IN WORK47 COMMON IN INPT LOOKUP MNCHN1 MNCHN4 SEGSUB
INPUT INPT LOOKUP MNCHN4 SEGSUB
OUTPUT INPT LOOKUP MNCHN1

ALPTEN

INPUT SEGSUB
OUTPUT SEGSUB

ALPX

IN COMO COMMON IN MNCHN1 MNCHN4 PARTBN RBSUB SEGSUB
SLOT
INPUT SEGSUB
OUTPUT SEGSUB

SND-111D PERFORMANCE PREDICTION PROGRAM

ALPY

IN COMQ COMMON IN MNCHN1 MNCHN4 PARTBN RBSUB SEGSUB
SLOT
INPUT SEGSUB
OUTPUT SEGSUB

AMACH

IN COMA COMMON IN AIBST AIBSUB IBM IBMOUT INERT
MNCHN1 MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSUB RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT SLOT AIBST MNCHN4 SEGSUB
OUTPUT AIBSUB NSCE SLOT AIBST MNCHN4 SEGSUB

AMAXD

INPUT MNCHN1

AMBSS

INPUT SETPH
OUTPUT SETPH

AMBSU

INPUT SETPH
OUTPUT SETPH

AMINI

INPUT SLOT TISUB MNCHN4 SETPH

AMPH

IN PARMF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INERT MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSUB RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT AIBSUB SLOT AIBST SETPH
OUTPUT AIBSUB SLOT PRT7 AIBST MNCHN4 SETPH

AMSQ

INPUT SLOT AIBST
OUTPUT SLOT AIBST

SRB-111D PERFORMANCE PREDICTION PROGRAM

AMH

IN	PARHE	COMMON	IN	AIBST	AIBSUB	CONV	IBM	IBMOUT
				INERT	MNCHN4	MODTSB	NSCE	PARTBN
				PRT7	RBSTSB	RSUB	SEGSUB	SETPH
				SLOT	SUBSON	TISUB		
INPUT	RBSTSB	IBMOUT	NSCE	PRT7	MNCHN4			
OUTPUT	PRT7							

AMHG

IN	INPUTG	COMMON	IN	AIBST	AIBSUB	IBM	IBMOUT	INPT
				MNCHN4	NSCE	PRT7	RBSTSB	SEGSUB
				SETPH	SLOT	SUBSON		
INPUT	RBSTSB	NSCE	INPT	MNCHN4				

AMH

IN	PARHU	COMMON	IN	MNCHN1
INPUT	MNCHN1			
OUTPUT	MNCHN1			

ANIBQ

IN	COMA	COMMON	IN	AIBST	AIBSUB	IBM	IBMOUT	INERT
				MNCHN1	MNCHN4	MODTSB	NSCE	PARTBN
				PRT7	RBSTSB	RSUB	SEGSUB	SETPH
				SLOT	SUBSON	TISUB		
INPUT	TISUB							
OUTPUT	IBM	TISUB	MNCHN4	SETPH				

ANITW

IN	INPUTN	COMMON	IN	IBM	INPT	TISUB
INPUT	INPT	TISUB				
OUTPUT	IBM					

ANLOPS

IN	COMA	COMMON	IN	AIBST	AIBSUB	IBM	IBMOUT	INERT
				MNCHN1	MNCHN4	MODTSB	NSCE	PARTBN
				PRT7	RBSTSB	RSUB	SEGSUB	SETPH
				SLOT	SUBSON	TISUB		
INPUT	MNCHN4	SETPH						
OUTPUT	PRT7	MNCHN4	SETPH					

ANN

IN	INPUTI	COMMON	IN	IBM	IBMOUT	INPT	MNCHN4	MODTSB
				NSCE	PRT7	SETPH		
INPUT	IBMOUT	INPT	SETPH					
OUTPUT	IBM							

SUB-1110 PERFORMANCE PREDICTION PROGRAM

AND

IN INPUT1 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
MODTSB PARTBN RBSUB SEGSUB SETPH
SYNONYM ANOI IN RBSUB
INPUT INPT MNCHN1
OUTPUT IBM

ANDAX

INPUT MNCHN4
OUTPUT MNCHN4

ANDBX

INPUT MNCHN4
OUTPUT MNCHN4

ANDH

IN WORKA COMMON IN AIBST ENDCSB MNCHN1 MODTSB PARTBN
SEGSUB SETPH SLOT TISUB
SYNONYM AND IN SLOT TISUB PARTBN
OUTPUT MNCHN1

ANDX

INPUT MNCHN4
OUTPUT MNCHN4

ANZ

IN INPUT1 COMMON IN IBM IBMOUT INPT MNCHN4 MODTSB
NSCE PRT7 SETPH
INPUT NSCE INPT SETPH
OUTPUT NSCE PRT7 SETPH

ANZR

INPUT NSCE
OUTPUT NSCE

AO

INPUT PARTBN
OUTPUT PARTBN

AOEM

IN WORKDE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB MNCHN1

SRB-1110 PERFORMANCE PREDICTION PROGRAM

AGHM

IN INPUTA COMMON IN IBM INPT MNCHN1 RB5UB
INPUT INPT MNCHN1

AOMCYL

IN PARM1 COMMON IN IBMOUT MNCHN4 PRT7
INPUT IBMOUT
OUTPUT MNCHN4

AONM

IN INPUTB COMMON IN INPT MNCHN1
INPUT INPT MNCHN1

AP

IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PARTBN PRT7 RB5UB SEGSUB
SETPH SLOT SUBSON TISUB
INPUT AIBSUB SLOT PRT7 AIBST MNCHN4 SEGSUB
OUTPUT AIBSUB NSCE PRT7 AIBST MNCHN4 SEGSUB

APA

IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
OUTPUT IBMOUT SLOT

APF

IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
OUTPUT IBMOUT SLOT

APH

INPUT MNCHN4
OUTPUT MNCHN4

APHI

IN COMA COMMON IN AIBST AIBSUB IBM IBMOUT INERT
MNCHN1 MNCHN4 MODTSB NSCE PARTBN
PRT7 RB5UB RB5UB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT AIBSUB SLOT AIBST SEGSUB
OUTPUT AIBSUB MNCHN4 SEGSUB

APHTEN

INPUT SEGSUB
OUTPUT SEGSUB

SRB-111D PERFORMANCE PREDICTION PROGRAM

APORT

IN INPUT4 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
 NSCE PARTBN SEGSUB
 INPUT NSCE INPT MNCHN4 SEGSUB
 OUTPUT IBM MNCHN4

APORTN

IN DUMYK COMMON IN MNCHN4
 INPUT MNCHN4
 OUTPUT MNCHN4

APRTSC

IN INPUT4 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
 NSCE PARTBN SEGSUB
 INPUT INPT MNCHN4 SEGSUB
 OUTPUT INPT MNCHN1 MNCHN4

APT

INPUT SEGSUB
 OUTPUT SEGSUB

APTEM

INPUT SEGSUB
 OUTPUT SEGSUB

APX

IN COMO COMMON IN MNCHN1 MNCHN4 PARTBN RDSUB SEGSUB
 SLOT
 INPUT SEGSUB
 OUTPUT SEGSUB

APY

IN COMO COMMON IN MNCHN1 MNCHN4 PARTBN RDSUB SEGSUB
 SLOT
 INPUT SEGSUB
 OUTPUT SEGSUB

AR

INPUT MACH NSCE PARTBN
 OUTPUT MACH NSCE PARTBN

ARINPT

INPUT MACH
 OUTPUT MACH

SAB-1110 PERFORMANCE PREDICTION PROGRAM

AR1

INPUT MACH
OUTPUT MACH

AR2

INPUT MACH
OUTPUT MACH

AT

IN PARMF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INERT MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSTSB RB SUB SEG SUB SETPH
SLOT SUBSON TISUB
INPUT RBSTSB IBMOUT NSCE PRT7 SETPH
OUTPUT MODTSB NSCE PRT7 SETPH

ATMAX

OUTPUT SEYPH

AU

INPUT PARTBN
OUTPUT PARTBN

AX

OUTPUT MNCHN1

AY

OUTPUT MNCHN1

A1

INPUT IBMOUT

A1A

IN PARMK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

A1B

IN PARMAN COMMON IN LOOKUP MNCHN4 NSCE SUBSON
INPUT SUBSON NSCE MNCHN4
OUTPUT LOOKUP

A2

INPUT IBMOUT

SRB-111D PERFORMANCE PREDICTION PROGRAM

A2A

IN PARMAC COMMON IN MNCHN4 NSCE PRT7 SUBSON
 INPUT SUBSON NSCE PRT7
 OUTPUT NSCE PRT7

A2B

IN PARMAN COMMON IN LOOKUP MNCHN4 NSCE SUBSON
 INPUT NSCE
 OUTPUT LOOKUP

E

INPUT XLIN

BE

IN WORKDE COMMON IN ENDCSB MNCHN1
 INPUT ENDCSB
 OUTPUT ENDCSB MNCHN1

BH

IN INPUTA COMMON IN IBM INPT MNCHN1 RBSUB
 INPUT INPT MNCHN1
 OUTPUT MNCHN1

BIGUN

INPUT MNCHN4
 OUTPUT MNCHN4

BINT

INPUT MACH NSCE
 OUTPUT MACH NSCE

BLKTEM

IN TEMFAC COMMON IN INPT RBSUB
 INPUT INPT RBSUB

BN

IN INPUTB COMMON IN INPT MNCHN1
 INPUT INPT MNCHN1

BOE

IN PARMH COMMON IN RBSUB
 INPUT RBSUB

SRB-111D PERFORMANCE PREDICTION PROGRAM

DOT

INPUT LESSQ
OUTPUT LESSQ

DOT2

INPUT LESSQ
OUTPUT LESSQ

BRNOUT

IN	PARMB	COMMON	IN	AIBST	AIBSUB	CONV	IBM	IBMOUT
				INPT	LOOKUP	MNCHN1	MNCHN4	MODTSB
				NSCE	PARTBN	PRT7	RBSUB	SEGSUB
				SETPH	SLOT	SUBSON	TISUB	
INPUT	TISUB		MNCHN4					
OUTPUT	IBM		TISUB		MNCHN4			

BSLTA

OUTPUT IBMOUT SLOT

DS-TE

OUTPUT IBMOUT

ETAOE

IN	INPUTA	COMMON	IN	IBM	INPT	MNCHN1	RBSUB
INPUT	INPT		RBSUB	MNCHN1			
OUTPUT	IBM		MNCHN1				

DYEGYE

INPUT MNCHN1
OUTPUT MNCHN1

BIE

IN PARMB COMMON IN RBSUB
INPUT RBSUB

CAA

INPUT AIBSUB
OUTPUT AIBSUB

CAE

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

CASE

INPUT INPUT

SBB-IIID PERFORMANCE PREDICTION PROGRAM

CBB

INPUT A1SUB
OUTPUT A1SUB

CBE

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

CBETA

INPUT SUBSON NSCE
OUTPUT SUBSON NSCE

CC

INPUT A1SUB
OUTPUT A1SUB

CCCE

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

CCVE

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

CDCE

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

CDVE

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

CECE

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

CEMPC

INPUT SEVPH
OUTPUT SEVPH

CEVE

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

SRB-111D PERFORMANCE PREDICTION PROGRAM

CF

OUTPUT PRT7

CFC

INPUT SETPH
OUTPUT SETPH

CFO

IN PARMK COMMON IN AIBST CONV IBM IBMOUT MNCHN4
PRT7 SETPH
INPUT SETPH
OUTPUT SETPH

CFOL

IN PARMK COMMON IN AIBST CONV IBM IBMOUT MNCHN4
PRT7 SETPH
INPUT IBMOUT SETPH
OUTPUT IBM PRT7 SETPH

CGCYL

INPUT IBMOUT
OUTPUT IBMOUT

CKDUMP

IN INPUT COMMON IN IBM INPT MNCHN4
INPUT INPT MNCHN4

CKTIME

IN DUMYN COMMON IN IBM MNCHN1 MNCHN4 RBSUB
OUTPUT IBM MNCHN4

CLOPS

IN PARMK COMMON IN AIBST CONV IBM IBMOUT MNCHN4
PRT7 SETPH
INPUT CONV SETPH
OUTPUT AIBST MNCHN4 SETPH

CN

IN INPUT COMMON IN IBM IBMOUT INPT MNCHN4 MODTSB
NSCE PRT7 SETPH
INPUT INPT MNCHN4 SETPH

CODET

INPUT SETPH
OUTPUT SETPH

SRB-111D PERFORMANCE PREDICTION PROGRAM

COEINT

IN BLK030 COMMON IN DATA INERT INPUT PRT1
INPUT INERT INPUT
OUTPUT PRT1

CONT

INPUT INPUT

CHP

IN INPUTQ COMMON IN AIBST IBM INPT SETPH
INPUT INPT AIBST
OUTPUT IBM

CRT

IN INPUTQ COMMON IN AIBST IBM INPT SETPH
INPUT INPT AIBST
OUTPUT IBM

CRK

IN INPUTQ COMMON IN AIBST IBM INPT SETPH
INPUT INPT SETPH
OUTPUT IBM

CS

INPUT LESSQ

CSCOE

IN BLK021 COMMON IN DATA INPT INPUT MNCHN4 PRESET
PRT1 RBSTSB
INPUT RBSTSB INPUT INPT MNCHN4
OUTPUT PRT1

CSTAR

IN INPUTQ COMMON IN AIBST AIBSUB IBM IBMOUT INPT
MNCHN4 NSCE PRT7 RBSTSB SEGSUB
SETPH SLOT SUBSON
INPUT RBSTSB INPT PRT7 MNCHN4 SETPH
OUTPUT PRT7

CSTR

IN INPUTQ COMMON IN AIBST AIBSUB IBM IBMOUT INPT
MNCHN4 NSCE PRT7 RBSTSB SEGSUB
SETPH SLOT SUBSON
INPUT RBSTSB INPT MNCHN4

SRB-111D PERFORMANCE PREDICTION PROGRAM

CUR

OUTPUT SEGSUB

CIB

INPUT NSCE
OUTPUT NSCE

DAP

INPUT AIBST
OUTPUT AIBST

DAPHI

INPUT AIBST
OUTPUT AIBST

DE

IN INPUT COMMON IN IBM IBMOUT INPT MNCHN4 MODTSB
NSCE PRT7 SETPH
INPUT INPT PRT7 SETPH
OUTPUT SETPH

DEED

IN PARTK COMMON IN AIBST CONV IBM IBMOUT MNCHN4
PRT7 SETPH
INPUT CONV SETPH
OUTPUT CONV AIBST SETPH

DEL

INPUT TISUB
OUTPUT TISUB

DELOT

IN DUMTU COMMON IN MODTSB
INPUT MODTSB
OUTPUT MODTSB

DELF

IN INPUT COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT MNCHN1 MNCHN4 NSCE PARTBN
PRT7 RBSTSB RBSTSB RBSTSB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT RBSTSB IBMOUT NSCE SLOT INPT RBSTSB MNCHN4
SETPH SEGSUB
OUTPUT PRT7 SETPH

SBB-1110 PERFORMANCE PREDICTION PROGRAM

DELFX

INPUT SETPH
OUTPUT SETPH

DELH

IN PARMAC COMMON IN ENDCSB IBM INPT
INPUT ENDCSB INPT
OUTPUT ENDCSB IBM

DELL

IN COMP COMMON IN ENDCSB
OUTPUT ENDCSB

DELLP

INPUT SETPH
OUTPUT SETPH

DELT

IN BLK009 COMMON IN DATA INERT INITI INPUT PRT1
PRT7
INPUT INERT TISUB SETPH SEGSUB
OUTPUT TISUB

DELT

IN COMA COMMON IN AIBST AIBSUB IBM IBMOUT INERT
MNCHN1 MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSTSB RASUB SEGSUB SETPH
SLOT SUBSON TISUB
SYNONYM DELTT IN INERT
INPUT SUBSON IBMOUT MODTSB NSCE SLOT TISUB AIBST
MNCHN4 SETPH SEGSUB
OUTPUT TISUB AIBST MNCHN1 MNCHN4

DELTA

IN PARMF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INERT MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSTSB RASUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT AIBSUB RASUB MNCHN4 SEGSUB
OUTPUT AIBSUB SLOT AIBST MNCHN4

DELTIM

INPUT INERT
OUTPUT INERT

SRB-111D PERFORMANCE PREDICTION PROGRAM

DELTSP

IN INPUT COMMON IN IBM INPT TISUB
 INPUT INPT TISUB
 OUTPUT IBM

DELTSS

IN INPUT COMMON IN AIBST AIBSUB IBM INPT MNCHN4
 MODTSB RBSTSB RB SUB SEGSUB SETPH
 SLOT TISUB
 INPUT INPT TISUB MNCHN4
 OUTPUT IBM

DELTST

IN INPUT COMMON IN AIBST AIBSUB IBM INPT MNCHN4
 MODTSB RBSTSB RB SUB SEGSUB SETPH
 SLOT TISUB
 INPUT INPT TISUB AIBST MNCHN4
 OUTPUT IBM

DELTSY

IN BLK032 COMMON IN IBMOUT PRT7
 INPUT IBMOUT
 OUTPUT IBMOUT

DELTT

IN COMA COMMON IN AIBST AIBSUB IBM IBMOUT INERT
 MNCHN1 MNCHN4 MODTSB NSCE PARTBN
 PRT7 RBSTSB RB SUB SEGSUB SETPH
 SLOT SUBSON TISUB
 SYNONYM DELT IN RBSTSB
 INPUT INERT

DELTT0

IN INPUT COMMON IN AIBST AIBSUB IBM INPT MNCHN4
 MODTSB RBSTSB RB SUB SEGSUB SETPH
 SLOT TISUB
 INPUT INPT TISUB
 OUTPUT IBM

DELWF

INPUT SETPH
 OUTPUT SETPH

SRB-111D PERFORMANCE PREDICTION PROGRAM

DELWL

INPUT RBSUB
OUTPUT RBSUB

DELZ

IN INPUT COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT MNCHN1 MNCHN4 NSCE PARTBN
PRT7 RBSUB RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT INPT AIBST MNCHN1 SEGSUB
OUTPUT AIBST MNCHN1 PARTBN SEGSUB

DELZS

INPUT SEGSUB
OUTPUT SEGSUB

DELZT

INPUT SEGSUB
OUTPUT SEGSUB

DEI

IN WORKDE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB MNCHN1

DHI

IN INPUTA COMMON IN IBM INPT MNCHN1 RBSUB
INPUT INPT MNCHN1
OUTPUT IBM

DIFAB

INPUT CONV
OUTPUT CONV

DIFAKR

INPUT CONV
OUTPUT CONV

DIS

IN PARMF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INERT MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSUB RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT CONV SETPH
OUTPUT CONV SETPH

SRB-111D PERFORMANCE PREDICTION PROGRAM

DISB

IN DUMYQ COMMON IN CONV SETPH
INPUT CONV SETPH
OUTPUT CONV SETPH

DLRF

IN INPUTC COMMON IN ENDCSB INPT
INPUT ENDCSB INPT

DLTMP

INPUT AIBSUB
OUTPUT AIBSUB

DN1

IN INPUTB COMMON IN INPT MNCHN1
INPUT INPT MNCHN1

DP

INPUT SLOT AIBST
OUTPUT SLOT AIBST

DPHOT

INPUT RBSTSB
OUTPUT RBSTSB

DT

IN INPUTI COMMON IN IBM INBOUT INPT MNCHN4 MODTSB
NSCE PRT7 SETPH
INPUT MODTSB NSCE INPT SETPH
OUTPUT MODTSB

DT

INPUT SLOT AIBST
OUTPUT SLOT AIBST

DTINT

IN COHB COMMON IN INBOUT LOOKUP MNCHN4 MODTSB PRT7
SETPH
INPUT MODTSB SETPH
OUTPUT MNCHN4 SETPH

DUMX

INPUT INPT
OUTPUT INPT

SRB-111D PERFORMANCE PREDICTION PROGRAM

DUMX1

INPUT SEGSUB
OUTPUT SEGSUB

DUMX2

INPUT SEGSUB
OUTPUT SEGSUB

DUMY

INPUT INPT
OUTPUT INPT

DVDT

INPUT SLOT
OUTPUT SLOT

DNDOT

IN COMG	COMMON IN	AIBST	AIBSUB	IBMOUT	LOOKUP	MNCHN1
		MNCHN4	NSCE	PARTBN	PRT7	RBSTSB
		RBSUB	SEGSUB	SETPH	SLOT	TISUB
INPUT	AIBSUB	NSCE	AIBST	MNCHN4	SEGSUB	
OUTPUT	AIBSUB	NSCE	AIBST	MNCHN4	SEGSUB	

DNDOTA

IN PARMAL COMMON IN MNCHN4 NSCE
INPUT NSCE
OUTPUT NSCE

DNDOTB

IN PARMAL COMMON IN MNCHN4 NSCE
INPUT MNCHN4
OUTPUT NSCE

DNDT

INPUT	NSCE	SLOT	AIBST	MNCHN4
OUTPUT	NSCE	SLOT	AIBST	MNCHN4

DNDTA

IN PARMAL COMMON IN MNCHN4 NSCE
INPUT NSCE MNCHN4
OUTPUT NSCE

SRB-111D PERFORMANCE PREDICTION PROGRAM

DNDTB

IN PARMAL COMMON IN MNCHN4 NSCE
INPUT MNCHN4
OUTPUT NSCE

DNDTS

IN COMK COMMON IN IBM IBMOUT SEGSUB SLOT TISUB
INPUT SEGSUB
OUTPUT IBMOUT SLOT

DNSLTA

IN COMK COMMON IN IBM IBMOUT SEGSUB SLOT TISUB
INPUT SLOT SEGSUB
OUTPUT IBMOUT SLOT IBM

DNSLTF

IN COMK COMMON IN IBM IBMOUT SEGSUB SLOT TISUB
INPUT SLOT SEGSUB
OUTPUT IBMOUT SLOT IBM

DNTEH

INPUT SEGSUB
OUTPUT SEGSUB

E

INPUT MNCHN4

END

INPUT INPUT INPT

LPCA

IN INPUT COMMON IN AIBST IBM INPT
INPUT INPT AIBST

EPCN

IN INPUT COMMON IN AIBST IBM INPT
INPUT INPT AIBST

EPG

IN PARMX COMMON IN PRT7 SETPH
INPUT SETPH
OUTPUT PRT7 SETPH

EPR

OUTPUT PRT7

SRB-111D PERFORMANCE PREDICTION PROGRAM

EPS

INPUT AIBST SETPH
OUTPUT AIBST SETPH

EPSA

INPUT AIBST

EPSN

INPUT AIBST

EPI

IN PARMK COMMON IN AIBST CONV IBM IBMOUT MNCHN4
PRT7 SETPH
INPUT SEYPH
OUTPUT SEYPH

ER

INPUT MODTSB
OUTPUT MODTSB

ERBAR

IN INPUTJ COMMON IN IBM INPT MODTSB RBSUB
INPUT MODTSB INPT

EREXP

IN INPUTJ COMMON IN IBM INPT MODTSB RBSUB
INPUT MODTSB INPT

ERR

IN BLK001 COMMON IN INITI INPT INPUT MAIN PRESET
PRT1
OUTPUT INITI

ERROR

INPUT MNCHN4
OUTPUT MNCHN4

EXPI

INPUT SEYPH
OUTPUT SEYPH

EI

INPUT SLOT AIBST SETPH
OUTPUT SLOT AIBST SETPH

SRD-IIID PERFORMANCE PREDICTION PROGRAM

E2

INPUT SLOT SETPH
OUTPUT SLOT AIBST SETPH

F

IN PARMK COMMON IN AIBST CONV IBM IBHOUT MNCHN4
PRT7 SETPH
INPUT PRT7 SETPH
OUTPUT SETPH

FACTOR

INPUT LOOKUP
OUTPUT LOOKUP

F1

IN BLK016 COMMON IN INERT INIT1 PRT7
INPUT INERT PRT7
OUTPUT INERT PRT7

FILE13

INPUT MAIN

F12

IN BLK016 COMMON IN INERT INIT1 PRT7
INPUT INERT
OUTPUT INERT INIT1

FN

INPUT LESSQ
OUTPUT LESSQ

FTDEL

INPUT PRT7
OUTPUT PRT7

FTVAC

INPUT PRT7
OUTPUT PRT7

FVAC

IN COM1 COMMON IN IBHOUT PRT7
INPUT IBHOUT PRT7
OUTPUT IBHOUT

SRB-111D PERFORMANCE PREDICTION PROGRAM

FVACK

INPUT IBMOUT
OUTPUT IBMOUT

FX

INPUT SETPH
OUTPUT SETPH

G

INPUT RB SUB
OUTPUT RB SUB

GAM

INPUT SETPH

GAMA

INPUT MACH
OUTPUT MACH

GAMA

IN	INPUT	COMMON	IN	AIBST	AIBSUB	IBM	IBMOUT	INPT
				MNCHN4	NSCE	PRT7	RBSTSB	SEGSUB
				SETPH	SLOT	SUBSON		
INPUT	RBSTSB	AIBSUB	SUBSON	NSCE	SLOT	INPT	AIBST	
OUTPUT	MNCHN4	SETPH	SEGSUB					

GAMAG

IN	INPUT	COMMON	IN	AIBST	AIBSUB	IBM	IBMOUT	INPT
				MNCHN4	NSCE	PRT7	RBSTSB	SEGSUB
				SETPH	SLOT	SUBSON		
INPUT	RBSTSB	NSCE	INPT	MNCHN4				

GAMASQ

INPUT RBSTSB
OUTPUT RBSTSB

GCR

INPUT RB SUB
OUTPUT RB SUB

GD

INPUT PARTBN
OUTPUT PARTBN

SRB-111D PERFORMANCE PREDICTION PROGRAM

GHI

INPUT SETPH
OUTPUT SETPH

GNOT

IN CONSTS COMMON IN AIBST AIBSUB ENDCSB IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PRT7 RBSTSB SEG5UB SETPH
SLOT SUBSON
INPUT RBSTSB AIBSUB SUBSON IBMOUT NSCE SLOT AIBST
OUTPUT MNCHN4 SETPH
IBM

G0130

INPUT TISUB
OUTPUT TISUB

G0210

INPUT TISUB
OUTPUT TISUB

GPI

INPUT SETPH
OUTPUT SETPH

GRTEMP

INPUT RBSUB
OUTPUT RBSUB

HALT

INPUT TISUB
OUTPUT TISUB

HCO

IN INPUTU COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT MNCHN1 MNCHN4 NSCE PARTBN
PRT7 RBSTSB RB5UB SEG5UB SETPH
SLOT SUBSON TISUB
INPUT IBMOUT INPT TISUB AIBST MNCHN1 SETPH
OUTPUT MNCHN1

HEADER

OUTPUT INPUT

SBB-111D PERFORMANCE PREDICTION PROGRAM

HEO

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB

HER

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB

HEI

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB

HE2

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB

MHR

IN INPUTA COMMON IN IBM INPT MNCHN1 RBSUB
INPUT INPT RBSUB
OUTPUT IBM RBSUB

HRB

INPUT RBSUB
OUTPUT RBSUB

MSUBMG

IN PARMAB COMMON IN ENDCSB IBM IBMOUT INPT LOOKUP
MNCHN1 MNCHN4 PRT7 RBSUB SETPH
TISUB

INPUT ENDCSB INPT

I

INPUT	LESSQ	RBSUB	INPUT	IBMOUT	MODTSB	IBM	INPT
	LOOKUP	TISUB	MNCHN1	MNCHN4	SETPH	PARTBN	SEGSUB
OUTPUT	LESSQ	PRT1	RBSUB	INPUT	IBMOUT	MODTSB	IBM
	INPT	LOOKUP	TISUB	MNCHN1	MNCHN4	SETPH	PARTBN
	SEGSUB						

IAFT

INPUT PARTBN
OUTPUT PARTBN

SUB-111D PERFORMANCE PREDICTION PROGRAM

IBDATA

INPUT INPT

IBH

INPUT INPUT

IBN

INPUT INPT

ICHN

IN PARMS	COMMON IN	AIBST	IBM	IBMOUT	MNCHN1	MNCHN4
		MODTSB	NSCE	RBSUB	RBSUB	SEGSUB
		SETPH	SLOT	TISUB		
INPUT	IBMOUT	MODTSB	RBSUB	AIBST	MNCHN4	SEGSUB
OUTPUT	RBSUB	NSCE	SLOT	IBM	AIBST	MNCHN1
	SETPH	SEGSUB				

ICHOKE

INPUT NSCE
OUTPUT SUBSON

ICOUNT

INPUT SLOT
OUTPUT SLOT

IDISP

INPUT INPT

IDN

INPUT INPUT

IDP

INPUT MNCHN4
OUTPUT MNCHN4

IE

INPUT	AIBSUB	IBMOUT	MODTSB	AIBST	MNCHN4	SETPH	SEGSUB
OUTPUT	AIBSUB	MODTSB	SLOT	TISUB	AIBST	MNCHN4	SETPH
	SEGSUB						

IEND

IN COMS	COMMON IN	MNCHN4	RBSTSB	RBSUB
INPUT	RBSUB			
OUTPUT	MNCHN4			

SRB-111D PERFORMANCE PREDICTION PROGRAM

IER

OUTPUT ENDCSB

IERROR

INPUT MNCHN1
OUTPUT MNCHN1

IFLAG

IN PARMAA COMMON IN AIBST AIBSUB INPT MNCHN4 NSCE
RBSUB SEGSUB SETPH SLOT SUBSON
INPUT AIBST SETPH
OUTPUT AIBST MNCHN4 SETPH

IFLS

IN BLK029 COMMON IN MNCHN4 PARTBN SEGSUB
INPUT PARTBN SEGSUB
OUTPUT PARTBN SEGSUB

IFLSEC

INPUT SEGSUB
OUTPUT SEGSUB

IFN

INPUT PARTBN
OUTPUT PARTBN

III

IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PARTBN PRT7 RBSUB SEGSUB
SETPH SLOT SUBSON TISUB
INPUT AIBSUB RBSUB TISUB AIBST MNCHN4 PARTBN SEGSUB
OUTPUT AIBSUB MODTSB SLOT IBM TISUB AIBST MNCHN4
PARTBN SEGSUB

IIIM

OUTPUT PARTBN

IIJ

IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PARTBN PRT7 RBSUB SEGSUB
SETPH SLOT SUBSON TISUB
INPUT TISUB SEGSUB
OUTPUT MODTSB SLOT IBM TISUB MNCHN4 SEGSUB

SRB-111D PERFORMANCE PREDICTION PROGRAM

115

IN PARMB		COMMON IN		AIBST	AIBSUB	CONV	IBM	IBMOUT
				INPT	LOOKUP	MNCHN1	MNCHN4	MODTSB
				NSCE	PARTBN	PRT7	RSUB	SEGSUB
				SETPH	SLOT	SUBSON	TISUB	
INPUT	IBMOUT	SLOT		TISUB	MNCHN1	MNCHN4	SEGSUB	
OUTPUT	IBMOUT	SLOT	IBM	TISUB	MNCHN1	MNCHN4	SEGSUB	

1J

INPUT	SEGSUB
OUTPUT	SEGSUB

1K

INPUT	MODTSB
OUTPUT	MODTSB

1N

IN BLK001		COMMON IN		INIT1	INPT	INPUT	MAIN	PRESET
				PRT1				
SYNORTH		NOUT		IN INPUT				
INPUT	INPT							

INPUT1

INPUT	INPUT
-------	-------

1OPT

INPUT	SUBSON	NSCE	MNCHN4
OUTPUT	MNCHN4		

1OUT

OUTPUT	IBMOUT
--------	--------

1PASS

IN DUMYX		COMMON IN		NSCE
INPUT	NSCE			
OUTPUT	NSCE			

1PBNFL

INPUT	SEGSUB
OUTPUT	PARTBN SEGSUB

1PBNFS

INPUT	SEGSUB
OUTPUT	SEGSUB

SRB-IIID PERFORMANCE PREDICTION PROGRAM

IPLAN

INPUT MNCHN4

IPLANE

INPUT MNCHN4
OUTPUT MNCHN4

IRP

INPUT MNCHN4
OUTPUT MNCHN4

IS

INPUT NSCE RBSUB MNCHN4 PARTBN SEGSUB
OUTPUT NSCE MNCHN4 PARTBN SEGSUB

ISAV

INPUT SEGSUB
OUTPUT SEGSUB

ISPI

INPUT SLOT
OUTPUT SLOT

ISR

INPUT SLOT
OUTPUT SLOT

ISS

INPUT PARTBN
OUTPUT PARTBN

ISI

IN PARMB	COMMON IN	AIBST	AIBSUB	CONV	IBM	IBMOUT
		INPT	LOOKUP	MNCHN1	MNCHN4	MODTSB
		NSCE	PARTBN	PRT7	RBSUB	SEGSUB
		SETPH	SLOT	SUBSON	TISUB	
INPUT	SLOT					
OUTPUT	SLOT	IBM	MNCHN4	SEGSUB		

SRB-1110 PERFORMANCE PREDICTION PROGRAM

IS2

IN	PARMB	COMMON	IN	AIBST	AIBSUB	CONV	IBM	IBMOUT
				INPT	LOOKUP	MNCHN1	MNCHN4	MODTSB
				NSCE	PARTBN	PHT7	RBSUB	SEGSUB
				SETPH	SLOT	SUBSON	TISUB	
INPUT	SLOT	SEGSUB						
OUTPUT	SLOT	IBM	MNCHN4	SEGSUB				

ITAU

INPUT	LOOKUP
OUTPUT	LOOKUP

ITER

INPUT	MACH	SUBSON	SLOT	AIBST	SETPH
OUTPUT	MACH	SUBSON	SLOT	AIBST	SETPH

ITERH

INPUT	MNCHN4
OUTPUT	MNCHN4

ITP18

INPUT	NSCE
OUTPUT	NSCE

ITP28

INPUT	NSCE
OUTPUT	NSCE

ITT18

INPUT	NSCE
OUTPUT	NSCE

IXF

INPUT	MNCHN4
OUTPUT	MNCHN4

IX2

INPUT	MNCHN4
OUTPUT	MNCHN4

I2

INPUT	IBM	LOOKUP	RBSUB	TISUB	MNCHN4	SEGSUB
OUTPUT	IBM	LOOKUP	RBSUB	TISUB	MNCHN4	SEGSUB

SAB-1110 PERFORMANCE PREDICTION PROGRAM

J
 INPUT IBMOUT NSCE IBM INPT MNCHN1 MNCHN4 SETPH
 OUTPUT IBMOUT NSCE IBM INPT LOOKUP MNCHN1 MNCHN4
 SETPH

JJ
 INPUT MNCHN1
 OUTPUT MNCHN1

JUMP
 IN DUMYR COMMON IN MNCHN4 TISUB
 INPUT TISUB
 OUTPUT TISUB MNCHN4

A
 INPUT IBMOUT XLIN LOOKUP MNCHN4
 OUTPUT IBMOUT XLIN LOOKUP MNCHN1 MNCHN4

ADUMP
 IN INPUT COMMON IN AIBST AIBSUB CONV IBM IBMOUT
 INPT MNCHN1 MNCHN4 NSCE PARTBN
 PRT7 RBSTSB RBSD SEGSUB SETPH
 SLOT SUBSON TISUB
 INPUT AIBSUB CONV SLOT INPT AIBST MNCHN4 SETPH
 SEGSUB
 OUTPUT IBM MNCHN4

KP
 INPUT SEGSUB
 OUTPUT SEGSUB

KPLANE
 IN INPUT COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
 MODTSB NSCE SEGSUB SETPH
 INPUT MODTSB NSCE INPT LOOKUP MNCHN1 MNCHN4 SETPH
 SEGSUB
 OUTPUT IBM INPT MNCHN1 MNCHN4

KPM1
 INPUT MNCHN4
 OUTPUT MNCHN4

SMB-111D PERFORMANCE PREDICTION PROGRAM

KPRNT

IN BLK032 COMMON IN IBMOUT PRT7
 INPUT IBMOUT PRT7
 OUTPUT IBMOUT

KPI

INPUT SEGSUB
 OUTPUT SEGSUB

KRPLN

OUTPUT MNCHN4

KRPN

IN BLK029 COMMON IN MNCHN4 PARTBN SEGSUB
 INPUT PARTBN SEGSUB
 OUTPUT MNCHN4

KRPN1

OUTPUT MNCHN4

L

INPUT MNCHN4 SEGSUB
 OUTPUT PRT1 IBMOUT XLIN MNCHN4 SEGSUB

LEWIS

INPUT INPUT

LH

INPUT LOOKUP
 OUTPUT LOOKUP

LH1

INPUT LOOKUP
 OUTPUT LOOKUP

LIST1

IN BLK021 COMMON IN DATA INPT INPUT MNCHN4 PRESET
 PRT1 RBSTSB
 INPUT INPUT
 OUTPUT PRESET PRT1

LL

INPUT SEGSUB
 OUTPUT SEGSUB

520-1110 PERFORMANCE PREDICTION PROGRAM

LR

INPUT LOOKUP
OUTPUT LOOKUP

LNI

INPUT LOOKUP
OUTPUT LOOKUP

LI

INPUT MNCHN4
OUTPUT MNCHN4

M

INPUT MNCHN4
OUTPUT MACH MNCHN4

MBETA

INPUT SUBSON NSCE

MDBETA

IN PARMK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

MDIB

IN PARMK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

MEK

INPUT SUBSON
OUTPUT SUBSON

MFINIT

IN BLK016 COMMON IN INERT INITI PRT7
INPUT INERT
OUTPUT INERT INITI

MIF

IN BLK016 COMMON IN INERT INITI PRT7
INPUT INERT PRT7
OUTPUT INERT PRT7

SRB-1110 PERFORMANCE PREDICTION PROGRAM

HIFZ

IN BLK016 COMMON IN INERT INITI PRT7
 INPUT INERT
 OUTPUT INERT INITI

HIGH

OUTPUT PRT7

HIR

IN BLK016 COMMON IN INERT INITI PRT7
 INPUT INERT PRT7
 OUTPUT INERT PRT7

HIRR

INPUT INERT
 OUTPUT INERT

HITOT

IN BLK009 COMMON IN DATA INERT INITI INPUT PRT1
 PRT7
 INPUT INERT INITI INPUT
 OUTPUT INERT PRT1 PRT7

HIZ

IN BLK009 COMMON IN DATA INERT INITI INPUT PRT1
 PRT7
 INPUT INERT
 OUTPUT INERT INITI

HMCASE

OUTPUT PRT7

HMGROS

OUTPUT PRT7

HNOZ

OUTPUT PRT7

NPIT

OUTPUT PRT7

SRD-111D PERFORMANCE PREDICTION PROGRAM

MPR IN DLK009 COMMON IN DATA INERT INITI INPUT PRT1
PRT7

INPUT INERT
OUTPUT INERT

MPRR
INPUT INERT
OUTPUT INERT

MPTOT
INPUT INERT
OUTPUT INERT

MTVC
OUTPUT PRT7

M1
INPUT MACH
OUTPUT MACH

M1B IN PARHAL COMMON IN MNCHN4 NSCE
INPUT NSCE MNCHN4
OUTPUT NSCE

M2
INPUT MACH
OUTPUT MACH

N
INPUT LESSQ INPT XLIN LOOKUP MNCHN4
OUTPUT INPT LOOKUP MNCHN4

NACCEL
IN INPUT COMMON IN AIBST IBM INPT
INPUT INPT AIBST
OUTPUT IBM

NAKAFT
IN AFTADJ COMMON IN IBM INPT RBSUB
INPUT INPT RBSUB
OUTPUT IBM

SRB-1110 PERFORMANCE PREDICTION PROGRAM

NAKEND

IN INPUTE COMMON IN IBM INPT MNCHN4 RBSTSB RDSUB
 RBVSUB SEGSUB
 INPUT INPT
 OUTPUT IBM

NAKHED

IN HEDADJ COMMON IN INPT RBSUB
 INPUT INPT RBSUB

NAKXR

IN INPUTE COMMON IN IBM INPT MNCHN4 RBSTSB RDSUB
 RBVSUB SEGSUB
 INPUT INPT
 OUTPUT IBM

NAKRST

INPUT CONV

NPACK

IN DUMYR COMMON IN MNCHN4 TISUB
 INPUT TISUB
 OUTPUT TISUB MNCHN4

NCARD

IN BLK025 COMMON IN DATA INPUT MAIN PRESET PRT1
 PRT7
 INPUT INPUT PRT7
 OUTPUT PRESET PRT1

NCASE

IN BLK005 COMMON IN INERT INPT INPUT MAIN MNCHN1
 PRESET PRT1 PRT7
 INPUT MAIN PRT1 INPUT INPT MNCHN1
 OUTPUT MAIN

NCASES

IN BLK005 COMMON IN INERT INPT INPUT MAIN MNCHN1
 PRESET PRT1 PRT7
 INPUT MAIN INPUT
 OUTPUT PRESET PRT1

SRB-1110 PERFORMANCE PREDICTION PROGRAM

NCH

IN INPUT COMMON IN IBM INPT MNCHN4
 INPUT INPT MNCHN4
 OUTPUT IBM

NCONT

IN PARMAN COMMON IN IBM INPT MNCHN1 NSCE
 INPUT IBM INPT
 OUTPUT IBM

NCOU

OUTPUT PRT1 INPUT

NCSOE

IN INPUTG COMMON IN AIBST AIBSUB IBM IDHOUT INPT
 MNCHN4 NSCE PRT7 RBSTSB SEGSUB
 SETPH SLOT SUBSON
 INPUT INPT
 OUTPUT IBM

NCSTR

IN INPUTG COMMON IN AIBST AIBSUB IBM IDHOUT INPT
 MNCHN4 NSCE PRT7 RBSTSB SEGSUB
 SETPH SLOT SUBSON
 INPUT RBSTSB NSCE INPT MNCHN4
 OUTPUT IBM

NCA

INPUT PARTBN
 OUTPUT PARTBN

NCY

INPUT PARTBN
 OUTPUT PARTBN

NDT

IN INPUTJ COMMON IN IBM INPT MODTSB RBSUB
 INPUT MODTSB INPT
 OUTPUT IBM

NDUMX

INPUT SEQSUB
 OUTPUT SEQSUB

SRU-111D PERFORMANCE PREDICTION PROGRAM

NEED

IN PARMAB COMMON IN ENDCSB IBM IBMOUT INPT LOOKUP
 MNCHN1 MNCHN4 PRT7 RBSUB SETPH
 TISUB
 INPUT ENDCSB
 OUTPUT ENDCSB MNCHN1

NEPS

IN INPUT COMMON IN AIBST IBM INPT
 INPUT INPT AIBST
 OUTPUT IBM

NF

IN BLK005 COMMON IN INERT INPT INPUT MAIN MNCHN1
 PRESET PRT1 PRT7
 INPUT INERT INPUT
 OUTPUT PRESET PRT1

NGEO

IN INPUT4 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
 NSCE PARTBN SEGSUB
 INPUT INPT LOOKUP PARTBN SEGSUB
 OUTPUT IBM

NGEOHD

IN INPUT4 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
 NSCE PARTBN SEGSUB
 INPUT INPT LOOKUP MNCHN1
 OUTPUT IBM

NGEOHN

IN INPUT4 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
 NSCE PARTBN SEGSUB
 INPUT INPT LOOKUP MNCHN1
 OUTPUT IBM

NI

IN PARMAB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
 INPT LOOKUP MNCHN1 MNCHN4 MODTSB
 NSCE PARTBN PRT7 RBSUB SEGSUB
 SETPH SLOT SUBSON TISUB
 INPUT IBMOUT NSCE SLOT PRT7 LOOKUP RBSUB TISUB
 AIBST MNCHN1 MNCHN4 SETPH SEGSUB
 OUTPUT IBM PRT7 MNCHN1 MNCHN4

SQU-111D PERFORMANCE PREDICTION PROGRAM

NIBFLG

IN BLK026 COMMON IN DATA INPT INPUT
INPUT INPUT INPT

NIBH

INPUT INPUT
OUTPUT INPUT

NIBOUT

INPUT INPUT INPT
OUTPUT INPUT INPT

NIDN

INPUT INPUT
OUTPUT INPUT

NIMI

INPUT MNCHN4
OUTPUT MNCHN4

NIP1

OUTPUT IBNOUT MNCHN4

NIP2

INPUT MNCHN4
OUTPUT IBNOUT MNCHN4

NL

INPUT INPUT
OUTPUT INPUT

NLEWIS

IN BLK005 COMMON IN INERT INPT INPUT MAIN MNCHN1
PRESET PRT1 PRT7
INPUT INPUT
OUTPUT PRESET PRT1

NMAR

INPUT SEYPH
OUTPUT SEYPH

SRB-1110 PERFORMANCE PREDICTION PROGRAM

NCUT

IN BLK001 COMMON IN INIT1 INPT INPUT MAIN PRESET
 PRT1
 SYNONYM IN IN INIT1
 INPUT INPUT
 OUTPUT INPUT

NPA

IN INPUTK COMMON IN IBM INPT MNCHN4
 INPUT INPT MNCHN4
 OUTPUT IBM

NPH

IN INPUTF COMMON IN CONV IBM INPT MNCHN4 RBSTSB
 SEGSUB SETPH
 INPUT RBSTSB INPT MNCHN4 SETPH
 OUTPUT IBM

NPLOT

IN BLK025 COMMON IN DATA INPUT MAIN PRESET PRT1
 PRT7
 INPUT INPUT PRT7
 OUTPUT PRESET PRT1

NPRINT

IN BLK012 COMMON IN MAIN
 OUTPUT MAIN

NPSBH1

INPUT MNCHN1
 OUTPUT MNCHN1

NPSUB

IN PARMAG COMMON IN INPT MNCHN1 NSCE
 INPUT INPT MNCHN1

NP1B

INPUT NSCE

NP2B

INPUT NSCE

NP3B

INPUT NSCE

SAB-III PERFORMANCE PREDICTION PROGRAM

NP4D

INPUT NSCE

NP5B

INPUT NSCE

NSCARD

IN BLK025 COMMON IN DATA INPUT MAIN PRESET PRT1
PRT7
INPUT INPUT PRT7
OUTPUT PRESET PRT1

NSCTRS

IN SECTOR COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
RBSUB SEG SUB TISUB
INPUT INPT LOOKUP RBSUB TISUB MNCHN1 MNCHN4 SEG SUB
OUTPUT IBM

NSI

IN BLK005 COMMON IN INERT INPT INPUT MAIN MNCHN1
PRESET PRT1 PRT7
INPUT INPUT
OUTPUT PRESET PRT1

NSLOT

IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODT5B
NSCE PARTBN PRT7 RBSUB SEG SUB
SETPH SLOT SUBSON TISUB
INPUT IBMOUT TISUB MNCHN1 SETPH PARTBN SEG SUB
OUTPUT IBM MNCHN1 MNCHN4

NSTAPE

IN BLK025 COMMON IN DATA INPUT MAIN PRESET PRT1
PRT7
INPUT INPUT PRT7
OUTPUT PRESET PRT1

NSUBMG

IN PARMAB COMMON IN ENDCSB IBM IBMOUT INPT LOOKUP
MNCHN1 MNCHN4 PRT7 RBSUB SETPH
TISUB
INPUT ENDCSB IBMOUT INPT PRT7 LOOKUP RBSUB TISUB
OUTPUT IBM MNCHN1 MNCHN4 SETPH

SRB-111D PERFORMANCE PREDICTION PROGRAM

NT

INPUT RB SUB
OUTPUT RB SUB

NTAB

IN INPUT COMMON IN IBM INPT MNCHN4 RBST5B RBSUB
RBVSUB SEGSUB
INPUT INPT RBSUB
OUTPUT IBM

NTABE

IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODT5B
NSCE PARTBN PRT7 RBSUB SEGSUB
SETPH SLOT SUBSON TISUB
OUTPUT IBM MNCHN1

NTAPE

IN BLK025 COMMON IN DATA INPUT MAIN PRESET PRT1
PRT7
INPUT MAIN INPUT PRT7
OUTPUT PRESET PRT1

NTEST

INPUT SEGSUB
OUTPUT SEGSUB

NTEST

IN DUMYC COMMON IN AIBST MNCHN1
INPUT AIBST
OUTPUT AIBST MNCHN1

NTESTH

IN DUMYM COMMON IN IBM MNCHN1 MNCHN4 RBSUB
INPUT RBSUB
OUTPUT RBSUB MNCHN1

NWRIBM

INPUT INPUT
OUTPUT INPUT

ON

OUTPUT SETPH

SAB-III PERFORMANCE PREDICTION PROGRAM

COPS

INPUT SLOT
OUTPUT SLOT

P

IN PARME COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INERT MNCHN4 MDTSB NSCE PARTBN
PRT7 RBSTSB RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT AIBSUB NSCE RBSUB MNCHN4 SETPH SEGSUB
OUTPUT AIBSUB NSCE SLOT RBSUB AIBST MNCHN4 SETPH
SEGSUB

P

INPUT LEBSQ

PA

IN INPUT COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT MNCHN4 MNCHN4 NSCE PARTBN
PRT7 RBSTSB RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT SUBSON NSCE SLOT INPT RBSUB MNCHN4 SETPH
OUTPUT IBM SETPH

PBAR

INPUT AIBSUB SLOT
OUTPUT AIBSUB SLOT

PBETA

INPUT SUBSON NSCE
OUTPUT SUBSON NSCE

PCRIT

OUTPUT AIBST

PCTAB

IN INPUT COMMON IN CONV IBM INPT MNCHN4 RBSTSB
SEGSUB SETPH
INPUT CONV INPT MNCHN4 SEGSUB
OUTPUT CONV IBM

PCTABX

IN DUMYG COMMON IN CONV MNCHN4
INPUT CONV
OUTPUT CONV MNCHN4

SMB-IIID PERFORMANCE PREDICTION PROGRAM

PD
 IN COMG COMMON IN AIBST AIBSUB IBMOUT LOOKUP MNCHN1
 MNCHN4 NSCE PARTBN PRT7 RBSTSD
 RB SUB SEGSUB SETPH SLOT TISUB
 INPUT SLOT RB SUB AIBST MNCHN4 SEGSUB
 OUTPUT AIBSUB SLOT AIBST MNCHN1 MNCHN4

PDPK
 IN COMH COMMON IN AIBST MNCHN1 MNCHN4
 INPUT AIBST MNCHN4
 OUTPUT AIBST MNCHN1 MNCHN4

PDX1
 INPUT SLOT AIBST
 OUTPUT SLOT AIBST

PDX2
 INPUT SLOT AIBST
 OUTPUT SLOT AIBST

PDY
 INPUT SLOT AIBST
 OUTPUT SLOT AIBST

PDY1
 INPUT SLOT AIBST
 OUTPUT SLOT AIBST

PDY2
 INPUT AIBST
 OUTPUT SLOT AIBST

PEPO
 IN PARMK COMMON IN AIBST CONV IBM IBMOUT MNCHN4
 PRT7 SETPH
 INPUT SETPH
 OUTPUT IBM PRT7 SETPH

PEPOX1
 INPUT SETPH
 OUTPUT SETPH

PEPOX2
 INPUT SETPH
 OUTPUT SETPH

SAB-1110 PERFORMANCE PREDICTION PROGRAM

PEPOY

INPUT SETPH
OUTPUT SETPH

PEPOY1

INPUT SETPH
OUTPUT SETPH

PEPOY2

OUTPUT SETPH

PEPO1

IN COMM COMMON IN MNCHN1 PRT7 SETPH SUBSON
INPUT SETPH
OUTPUT MNCHN1 SETPH

PH

IN PARHF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INERT MNCHN4 MOOTSB NSCE PARTBN
PRT7 RBSTSB RB SUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT RBSTSB AIBSUB PRT7 RB SUB AIBST MNCHN4 SETPH
OUTPUT AIBSUB PRT7 AIBST MNCHN4 SETPH

PH1

IN INPUT COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT MNCHN1 MNCHN4 NSCE PARTBN
PRT7 RBSTSB RB SUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT AIBSUB SLOT INPT AIBST MNCHN4 SETPH
OUTPUT AIBST

PHMAX

INPUT SETPH
OUTPUT SETPH

PHOLD

INPUT SETPH
OUTPUT SETPH

PHST

IN INPUTF COMMON IN CONV IBM INPT MNCHN4 RBSTSB
SEGSUB SETPH
INPUT RBSTSB INPT

SRB-111D PERFORMANCE PREDICTION PROGRAM

PHX

INPUT SETPH
OUTPUT SETPH

PI

IN CONSTS COMMON IN AIBST AIBSUB ENDCSB IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PRT7 RSTSB SEGSUB SETPH
SLOT SUBSON
INPUT ENDCSB MODTSB NSCE SLOT PRT7 MNCHN1 MNCHN4
OUTPUT IBM

PIH

INPUT AIBST
OUTPUT AIBST

PHA

IN PARNAK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

PMAX

IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PARTBN PRT7 RSUB SEGSUB
SETPH SLOT SUBSON TISUB
INPUT AIBSUB AIBST SETPH
OUTPUT MNCHN4 SETPH

PHAZ

IN PARNAK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

PMB

IN DUMYX COMMON IN NSCE
INPUT NSCE
OUTPUT NSCE

PMBZ

IN DUMYX COMMON IN NSCE
INPUT NSCE
OUTPUT NSCE

SRB-IIID PERFORMANCE PREDICTION PROGRAM

PHIN IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
 INPT LOOKUP MNCHN1 MNCHN4 MODTSB
 NSCE PARTUN PRT7 RBSUB SEGSUB
 SETPH SLOT SUBSON TISUB
 INPUT AIBSUB SETPH
 OUTPUT AIBSUB AIBST MNCHN4 SETPH

PHOHD INPUT INPT

PHOIN INPUT INPT

PO IN PARMZ COMMON IN IBMOUT MNCHN4 NSCE PRT7 SEGSUB
 SLOT
 INPUT NSCE SLOT MNCHN4 SEGSUB
 OUTPUT NSCE SLOT MNCHN4 SEGSUB

POA IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
 OUTPUT IBMOUT SLOT

POF IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
 OUTPUT IBMOUT SLOT

POLD INPUT MNCHN4
 OUTPUT MNCHN4

PCN IN PARMF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
 INERT MNCHN4 MODTSB NSCE PARTUN
 PRT7 RBSUB RBSUB SEGSUB SETPH
 SLOT SUBSON TISUB
 INPUT RBSUB SUBSON IBMOUT MODTSB NSCE PRT7 TISUB
 MNCHN4 SETPH
 OUTPUT SUBSON NSCE PRT7 MNCHN4 SETPH

PONBAR IN INPUTJ COMMON IN IBM INPT MODTSB RBSUB
 INPUT MODTSB INPT
 OUTPUT IBM

SRB-112D PERFORMANCE PREDICTION PROGRAM

PONC

INPUT SUBSON
OUTPUT SUBSON

PONX

INPUT SEYPH
OUTPUT SEYPH

PONZ

OUTPUT SUBSON

FOUT

INPUT AIBST
OUTPUT AIBST

PR

INPUT PARTBN
OUTPUT PARTBN

PRABN

INPUT NSCE
OUTPUT NSCE

PRABO

INPUT NSCE
OUTPUT NSCE

PRCHIT

IN DUMYK COMMON IN MNCHN4
INPUT MNCHN4
OUTPUT MNCHN4

PRCHIT

INPUT SUBSON
OUTPUT SUBSON

PRESS

IN INPUTG COMMON IN AIBST AIBSUB IGM IBHOUT INPT
MNCHN4 NSCE PM7 RBSTSB SEGSUB
SETPH SLOT SUBSON
INPUT RBSTSB NSCE INPT MNCHN4

SRB-1110 PERFORMANCE PREDICTION PROGRAM

PRIC

IN BLK031 COMMON IN DATA IBM IBMOUT INPT PRT7
TISUB
INPUT IBMOUT TISUB
OUTPUT TISUB

PRNT

IN COHA COMMON IN AIBST AIBSUB IBM IBMOUT INENT
MNCHN1 MNCHN4 MODTSB NSCE PARIBN
PRT7 ROSTSB RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT PRT7 SETPH SEGSUB
OUTPUT IBMOUT PRT7 TISUB AIBST MNCHN1 MNCHN4 SEGSUB

PRIFLG

IN INPIL COMMON IN IBM IBMOUT INPT
INPUT IBMOUT INPT
OUTPUT IBM

PRISP

IN BLK031 COMMON IN DATA IBM IBMOUT INPT PRT7
TISUB
INPUT INPT TISUB

PRISS

IN BLK031 COMMON IN DATA IBM IBMOUT INPT PRT7
TISUB
INPUT INPT TISUB

PRIST

IN BLK031 COMMON IN DATA IBM IBMOUT INPT PRT7
TISUB
INPUT INPT TISUB

PRITO

IN BLK031 COMMON IN DATA IBM IBMOUT INPT PRT7
TISUB
INPUT INPT TISUB

PSA

IN CONJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
INPUT SLOT TISUB
OUTPUT IBMOUT SLOT

SRB-111D PERFORMANCE PREDICTION PROGRAM

PSAPR

IN PARMY COMMON IN SLOT TISUB
INPUT SLOT
OUTPUT TISUB

PSF

IN CONJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
INPUT SLOT TISUB
OUTPUT IBMOUT SLOT

PSFPR

IN PARMY COMMON IN SLOT TISUB
INPUT SLOT
OUTPUT TISUB

PSOP0

INPUT SEYPH
OUTPUT SEYPH

PST

IN INPUT COMMON IN IBM INPT TISUB
INPUT INPT TISUB
OUTPUT IBM

PTIME

IN BLK031 COMMON IN DATA IBM IBMOUT INPT PRT7
TISUB
INPUT IBMOUT INPT PRT7
OUTPUT IBMOUT IBM

PTIMSV

IN BLK032 COMMON IN IBMOUT PRT7
INPUT IBMOUT
OUTPUT IBMOUT

PTMP

INPUT A1SUB NSCE
OUTPUT A1SUB NSCE

PIA

IN PARMK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

SRB-111D PERFORMANCE PREDICTION PROGRAM

PIAT IN PARMAC COMMON IN MNCHN4 NSCE PRT7 SUBSON
 INPUT SUBSON NSCE
 OUTPUT NSCE

PI9 IN PARMAC COMMON IN MNCHN4 NSCE PRT7 SUBSON
 INPUT SUBSON NSCE MNCHN4
 OUTPUT NSCE

PIBC
 INPUT NSCE
 OUTPUT NSCE

PIBG
 INPUT NSCE
 OUTPUT NSCE

PIBO
 INPUT NSCE
 OUTPUT NSCE

PIBT IN PARMAL COMMON IN MNCHN4 NSCE
 INPUT NSCE MNCHN4
 OUTPUT NSCE

FZBT
 INPUT NSCE
 OUTPUT NSCE

FZOLD
 INPUT NSCE
 OUTPUT NSCE

CR
 INPUT PARTBN
 OUTPUT PARTBN

R
 INPUT RB5UB
 OUTPUT RB5UB

SRB-IIID PERFORMANCE PREDICTION PROGRAM

R

IN INPUTG COMMON IN		AIBST	AIBSUB	IBM	IBMOUT	INPT
		MNCHN4	NSCE	PRT7	RBSTSB	SEGSUB
		SETPH	SLOT	SUBSON		
INPUT	AIBSUB	SUBSON	IBMOUT	NSCE	SLOT	INPT
	AIBST	MNCHN4	SETPH			RBSUB
OUTPUT	RBSTSB	AIBSUB	NSCE	SLOT	RB SUB	AIBST
						MNCHN4

RAD

INPUT	AIBSUB
OUTPUT	AIBSUB

RADIAN

IN CONSTS COMMON IN		AIBST	AIBSUB	ENDCSB	IBM	IBMOUT
		INPT	LOOKUP	MNCHN1	MNCHN4	MODTSD
		NSCE	PRT7	RBSTSB	SEGSUB	SETPH
		SLOT	SUBSON			
INPUT	ENDCSB					
OUTPUT	IBM					

RB

IN COMG COMMON IN		AIBST	AIBSUB	IBMOUT	LOOKUP	MNCHN1
		MNCHN4	NSCE	PRTBM	PRT7	RBSTSB
		RB SUB	SEGSUB	SETPH	SLOT	TISUB
INPUT	RBSTSB	NSCE	RB SUB	MNCHN4	SEGSUB	
OUTPUT	RBSTSB	NSCE	RB SUB	MNCHN4		

RBH1

IN CONO COMMON IN		MNCHN1	MNCHN4	PRTBM	RB SUB	SEGSUB
		SLOT				
INPUT	RB SUB	SEGSUB				
OUTPUT	SEGSUB					

RBRL

INPUT	MNCHN4
OUTPUT	MNCHN4

RBS

INPUT	MNCHN4
OUTPUT	MNCHN4

RBSLOT

IN PARKR COMMON IN		IBM	MNCHN4	RB SUB	SEGSUB	SLOT
INPUT	SLOT					
OUTPUT	RB SUB					

SRB-111D PERFORMANCE PREDICTION PROGRAM

RB5LTA

IN COMK	COMMON IN	IBM	IBMOUT	SEGSUB	SLOT	TISUB
INPUT	TISUB					
OUTPUT	IBMOUT	SLOT	IBM			

RB5LTF

IN COMK	COMMON IN	IBM	IBMOUT	SEGSUB	SLOT	TISUB
INPUT	TISUB					
OUTPUT	IBMOUT	SLOT	IBM			

RBZ

IN COMK	COMMON IN	AIBST	AIBSUB	IBMOUT	LOOKUP	MNCHN1
		MNCHN4	NSCE	PARTBN	PRT7	RBSTSD
INPUT	NSCE	PRT7	TISUB	MNCHN4	SEGSUB	
OUTPUT	NSCE	MNCHN1	MNCHN4	SEGSUB		

RBZH

INPUT	MNCHN4
OUTPUT	MNCHN4

RBZH

INPUT	MNCHN4
OUTPUT	MNCHN4

RBZNB

INPUT	MNCHN4
OUTPUT	MNCHN4

RB1A

INPUT	NSCE
OUTPUT	NSCE

RB1B

INPUT	NSCE
OUTPUT	NSCE

RB2A

INPUT	NSCE
OUTPUT	NSCE

RB2B

INPUT	NSCE
OUTPUT	NSCE

SRB-111D PERFORMANCE PREDICTION PROGRAM

REFTEM

IN TEMFAC COMMON IN INPT RBSUB
INPUT INPT RBSUB

RE1

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB MNCHN1
OUTPUT ENDCSB

RE2

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB

RF

IN INPUT1 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
MODTSB PARTBN RBSUB SEGSUB SETPH
SYNONYM RF1 IN RBSUB
INPUT SLOT INPT LOOKUP AIBST MNCHN1 MNCHN4 SETPH
PARTBN SEGSUB
OUTPUT IBM INPT MNCHN1 SETPH PARTBN SEGSUB

RF

IN WORKA COMMON IN AIBST ENDCSB MNCHN1 MODTSB PARTBN
SEGSUB SETPH SLOT TISUB
SYNONYM RFDH IN MODTSB
INPUT ENDCSB SLOT AIBST SETPH PARTBN SEGSUB
OUTPUT SETPH PARTBN SEGSUB

RFDH

IN WORKA COMMON IN AIBST ENDCSB MNCHN1 MODTSB PARTBN
SEGSUB SETPH SLOT TISUB
SYNONYM RF IN ENDCSB SLOT TISUB SETPH PARTBN
INPUT MNCHN1
OUTPUT MNCHN1

RFH1

IN COMO COMMON IN MNCHN1 MNCHN4 PARTBN RBSUB SEGSUB
SLOT
INPUT SLOT PARTBN SEGSUB
OUTPUT PARTBN SEGSUB

RFH15

INPUT PARTBN
OUTPUT PARTBN

SRB-111D PERFORMANCE PREDICTION PROGRAM

RF1

IN INPUT1 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
MODTSB PARTBN RMSUB SEGSUB SETPH
SYNONYM RF IN MODTSB
INPUT SETPH SEGSUB

RF1DP

INPUT MNCHN4
OUTPUT MNCHN4

RF5

IN BLK029 COMMON IN MNCHN4 PARTBN SEGSUB
INPUT PARTBN SEGSUB
OUTPUT PARTBN

RFX

IN COMM COMMON IN MNCHN4 MODTSB PARTBN SEGSUB SETPH
TISUB
INPUT SETPH PARTBN SEGSUB
OUTPUT SETPH SEGSUB

RFY

IN COMM COMMON IN MNCHN4 MODTSB PARTBN SEGSUB SETPH
TISUB
INPUT PARTBN SEGSUB
OUTPUT SEGSUB

RF1

INPUT MNCHN4
OUTPUT MNCHN4

RF2

INPUT MNCHN4
OUTPUT MNCHN4

RH0TMP

INPUT NSEC
OUTPUT NSEC

RH0TOL

IN INPUTR COMMON IN IBM INPT SETPH
INPUT INPT SETPH

SRB-IIID PERFORMANCE PREDICTION PROGRAM

RR01B

INPUT NSCE
OUTPUT NSCE

RM1

IN WORKRH COMMON IN INPT MNCHN1 MNCHN4 RBSTSB SETPH
OUTPUT MNCHN1

RI

IN WORKA COMMON IN AIBST ENDCSB MNCHN1 MODTSB PARTBN
SYNONYM R11 IN SEGSUB SETPH SLOT TISUB
INPUT ENDCSB

RI

IN INPUT1 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
MODTSB PARTBN RBSTSB SEGSUB SETPH
INPUT INPT LOOKUP MNCHN1 MNCHN4
OUTPUT IBM INPT MNCHN1

R1DM

IN WORKA COMMON IN AIBST ENDCSB MNCHN1 MODTSB PARTBN
SYNONYM R11 IN SEGSUB SETPH SLOT TISUB
INPUT MNCHN1
OUTPUT MNCHN1

R101DP

INPUT MNCHN4
OUTPUT MNCHN4

R11

INPUT MNCHN4
OUTPUT MNCHN4

R12

INPUT MNCHN4
OUTPUT MNCHN4

RM01HD

INPUT INPT

RM01N

INPUT INPT

SRB-111D PERFORMANCE PREDICTION PROGRAM

MNI
IN WORKRN COMMON IN AIBST IBM INPT MNCHN1 MNCHN4
RBSTSB SETPH
OUTPUT MNCHN1

RPL
IN INPUT4 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
NSCE PARTBN SEGSUB
SYNONYM TAUPLE IN PARTBN
INPUT INPT LOOKUP SEGSUB
OUTPUT IBM

MSLOTA
IN PARMR COMMON IN IBM MNCHN4 RB SUB SEG SUB SLOT
INPUT SLOT
OUTPUT SEG SUB

MSLOTF
IN PARMR COMMON IN IBM MNCHN4 RB SUB SEG SUB SLOT
INPUT SLOT
OUTPUT SEG SUB

S
OUTPUT SEG SUB

SA
IN INPUT COMMON IN IBM INPT MNCHN1 SLOT TISUB
INPUT INPT MNCHN1
OUTPUT IBM INPT MNCHN1

SB
IN INPUT COMMON IN IBM INPT MNCHN1 SLOT TISUB
INPUT INPT
OUTPUT IBM INPT MNCHN1

SCUR
IN PARMR COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODISB
NSCE PARTBN PRT7 RB SUB SEG SUB
SETPH SLOT SUBSON TISUB
INPUT IBMOUT SLOT TISUB MNCHN1 MNCHN4 SETPH PARTBN
SEG SUB
OUTPUT IBMOUT INPT TISUB MNCHN1 SEG SUB

SRB-1110 PERFORMANCE PREDICTION PROGRAM

SDIS

INPUT SETPH
OUTPUT SETPH

SECH

INPUT INPT LOOKUP RBSUB TISUB MNCHN4 SEGSUB
OUTPUT INPT LOOKUP RBSUB TISUB MNCHN4 SEGSUB

SIGMAP

IN TERFAC COMMON IN INPT RBSUB
INPUT INPT RBSUB

SII

IN BLK009 COMMON IN DATA INERT INITI INPUT PRTI
PR7
INPUT INERT INPUT
OUTPUT PRTI

SIRATC

IN PARMH COMMON IN IBM INPT MNCHN1 NSCE
INPUT NSCE INPT
OUTPUT NSCE IBM

SKA

OUTPUT IBMOUT

SKF

OUTPUT IBMOUT

SLOPE

INPUT MACH NSCE AIBST
OUTPUT MACH NSCE AIBST

SLTBRN

IN INPUT COMMON IN IBM INPT MNCHN1 SLOT TISUB
INPUT SLOT INPT MNCHN1
OUTPUT IBM

SLTFLG

IN PARMH COMMON IN IBM MNCHN4 RBSUB SEGSUB SLOT
INPUT RBSUB SEGSUB
OUTPUT SLOT IBM MNCHN4 SEGSUB

SRU-111D PERFORMANCE PREDICTION PROGRAM

SPHOT

IN PARMG COMMON IN AIBST IBMOUT LOOKUP MNCHN4 PRT7
 RBSTSB SETPH TISUB
 INPUT PRY7 SETPH
 OUTPUT PRY7 SETPH

SPONDY

IN PARMG COMMON IN AIBST IBMOUT LOOKUP MNCHN4 PRT7
 RBSTSB SETPH TISUB
 INPUT PRY7 SETPH
 OUTPUT PRY7 SETPH

SRMDT1

INPUT PRY7
 OUTPUT PRY7

SRMVT1

INPUT PRY7
 OUTPUT PRY7

STATIC

IN BLKQ21 COMMON IN DATA INPT INPUT MNCHN4 PRESET
 PRT1 RBSTSB
 INPUT INPUT

STDTST

IN INPUTH COMMON IN AIBST AIBSUB IBM INPT MNCHN4
 MODTSB RBSTSB RMSUB SEGSUB SETPH
 SLOT TISUB
 INPUT RBSTSB INPT RBSTSB TISUB AIBST MNCHN4 SEGSUB
 OUTPUT IBM TISUB

STFLAG

IN INPUTH COMMON IN AIBST AIBSUB IBM INPT MNCHN4
 MODTSB RBSTSB RMSUB SEGSUB SETPH
 SLOT TISUB
 INPUT AIBSUB MODTSB SLOT INPT RBSTSB TISUB AIBST
 MNCHN4 SETPH SEGSUB
 OUTPUT IBM

STO

INPUT SUBSON
 OUTPUT SUBSON

SRB-1110 PERFORMANCE PREDICTION PROGRAM

SUBS1

INPUT SUBSON

SUBS2

INPUT SUBSON

SUMRF

INPUT SETPH
OUTPUT SETPH

SUMRFZ

IN DLK033 COMMON IN INPT SETPH
INPUT SETPH
OUTPUT SETPH

SUMX

INPUT LESSQ
OUTPUT LESSQ

SUMXY

INPUT LESSQ
OUTPUT LESSQ

SUMX2

INPUT LESSQ
OUTPUT LESSQ

SUMX2Y

INPUT LESSQ
OUTPUT LESSQ

SUMX3

INPUT LESSQ
OUTPUT LESSQ

SUMX4

INPUT LESSQ
OUTPUT LESSQ

SUMY

INPUT LESSQ
OUTPUT LESSQ

SRB-111D PERFORMANCE PREDICTION PROGRAM

SVALP

INPUT MNCHN4
OUTPUT MNCHN4

SWDOTN

IN PARMK COMMON IN AIBST CONV IBM IBMOUT MNCHN4
PRT7 SETPH
INPUT PRT7 SETPH
OUTPUT PRT7 SETPH

T

IN PARHF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INERT MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSTSB RB SUB SEG SUB SETPH
SLOT SUBSON TISUB
INPUT AIBSUB NSCE SLOT AIBST MNCHN4 SETPH SEG SUB
OUTPUT AIBSUB NSCE SLOT AIBST MNCHN4

TA

INPUT PARTBN
OUTPUT PARTBN

TABD

IN INPUTE COMMON IN IBM INPT MNCHN4 RBSTSB RB SUB
RBYSUB SEG SUB
INPUT INPT RB SUB

TABI

IN INPUTE COMMON IN IBM INPT MNCHN4 RBSTSB RB SUB
RBYSUB SEG SUB
INPUT INPT RB SUB

TAU

IN COMT COMMON IN ENDCSB IBMOUT MNCHN1 MNCHN4 PRT7
SEG SUB SLOT TISUB
INPUT TISUB MNCHN4 SEG SUB
OUTPUT ENDCSB TISUB MNCHN1 MNCHN4 SEG SUB

TAU

INPUT LOOKUP
OUTPUT LOOKUP

SRB-1110 PERFORMANCE PREDICTION PROGRAM

TAUADJ

IN WORK40 COMMON IN IBM INPT MNCHN4
INPUT INPT MNCHN4
OUTPUT IBM

TAUAFT

IN AFTADJ COMMON IN IBM INPT RBSUB
INPUT INPT RBSUB

TAUDDM

INPUT SEGSUB
OUTPUT SEGSUB

TAUEO

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

TAUE1

IN WORKRE COMMON IN ENDCSB MNCHN1
OUTPUT ENDCSB

TAUHD

IN INPUT4 COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
NSCE PARTBN SEGSUB
INPUT INPT LOOKUP
OUTPUT IBM

TAUHD

IN HEDADJ COMMON IN INPT RBSUB
INPUT INPT RBSUB

TAUMAX

INPUT SEGSUB
OUTPUT SEGSUB

TAUMH1

IN BLK029 COMMON IN MNCHN4 PARTBN SEGSUB
INPUT PARTBN SEGSUB
OUTPUT PARTBN SEGSUB

TAUMNA

IN INPUTW COMMON IN INPT LOOKUP TISUB
INPUT INPT LOOKUP TISUB

SRB-1110 PERFORMANCE PREDICTION PROGRAM

TAUMNB

IN INPUT COMMON IN INPT LOOKUP TISUB
INPUT INPT TISUB

TAUMSL

INPUT PARTBN

TAUMW

IN DUMYP COMMON IN IBM MNCHN4 PARTBN SEGSUB
INPUT PARTBN SEGSUB
OUTPUT PARTBN SEGSUB

TAUMX

IN COMM COMMON IN MNCHN4 MODTSB PARTBN SEGSUB SETPH
TISUB
INPUT SEGSUB
OUTPUT SEGSUB

TAUMY

IN COMM COMMON IN MNCHN4 MODTSB PARTBN SEGSUB SETPH
TISUB
INPUT SEGSUB
OUTPUT SEGSUB

TAUN

IN INPUT COMMON IN IBM INPT LOOKUP MNCHN1 MNCHN4
NSCE PARTBN SEGSUB
INPUT INPT LOOKUP
OUTPUT IBM

TAUNB

IN PARAM COMMON IN INPT LOOKUP
INPUT INPT LOOKUP

TAURPL

IN DUMYP COMMON IN LOOKUP MNCHN4
INPUT LOOKUP MNCHN4
OUTPUT MNCHN4

TAUS

INPUT TISUB SEGSUB
OUTPUT TISUB SEGSUB

TAUSLT

INPUT PARTBN

SRB-IIID PERFORMANCE PREDICTION PROGRAM

TAUT

INPUT TISUB
OUTPUT TISUB

TAUADP

IN COMG COMMON IN AIBST AIBSUB IMHOUT LOOKUP MNCHN1
MNCHN4 NSCE PARTBN PRT7 RBST5B
RBSUB SEGSUB S&TPH SLOT TISUB
INPUT RBSUB TISUB PARTBN SEGSUB
OUTPUT TISUB MNCHN1 MNCHN4

TAUWRP

IN WORK47 COMMON IN INPT LOOKUP MNCHN1 MNCHN4 SEGSUB
INPUT LOOKUP MNCHN4 SEGSUB
OUTPUT MNCHN4

TAUZ

IN COMG COMMON IN AIBST AIBSUB IMHOUT LOOKUP MNCHN1
MNCHN4 NSCE PARTBN PRT7 RBST5B
RBSUB SEGSUB S&TPH SLOT TISUB
INPUT PRT7 LOOKUP RBSUB TISUB MNCHN4 PARTBN SEGSUB
OUTPUT TISUB MNCHN1 MNCHN4

TAU1

INPUT TISUB
OUTPUT TISUB

TAU2

INPUT TISUB
OUTPUT TISUB

TA1B

IN PARMAM COMMON IN INPT LOOKUP
INPUT INPT LOOKUP

TA2B

IN PARMAM COMMON IN INPT LOOKUP
INPUT INPT LOOKUP

TBETA

INPUT SUBSON NSCE
OUTPUT SUBSON NSCE

SUB-111D PERFORMANCE PREDICTION PROGRAM

TBLAKR
 IN INPUT COMMON IN IBM INPT MNCHN4 RBSTSB RBSUB
 INPUT INPT

TBLCH
 IN INPUT COMMON IN IBM INPT MNCHN4
 INPUT INPT MNCHN4

TBLPA
 IN INPUT COMMON IN IBM INPT MNCHN4
 INPUT INPT MNCHN4

TCOMB
 IN INPUT COMMON IN AIBST AIBSUB IBM IBMOUT INPT
 INPUT RBSTSB NSCE MNCHN4 NSCE PRT7 RBSTSB SEGSUB
 INPUT RBSTSB NSCE INPT MNCHN4

IDLEDT
 IN INPUT COMMON IN IBM INPT MODTSB RBSUB
 INPUT MODTSB INPT

TERAFT
 IN AFTADJ COMMON IN IBM INPT RBSUB
 INPUT INPT RBSUB

TERRED
 IN HEADADJ COMMON IN INPT RBSUB
 INPUT INPT RBSUB

TERP
 INPUT IBMOUT NSCE AIBST MNCHN4 SEGSUB
 OUTPUT IBMOUT NSCE TISUB AIBST MNCHN4 SEGSUB

TERPA
 INPUT SLOT
 OUTPUT SLOT

TERPI
 INPUT AIBSUB ENDCSB IBMOUT RBSUB SETPH SEGSUB
 OUTPUT AIBSUB ENDCSB IBMOUT RBSUB SETPH SEGSUB

SNB-111D PERFORMANCE PREDICTION PROGRAM

TEMP2
 INPUT ENDCSB IBHOUT RBSUB
 OUTPUT ENDCSB IBHOUT RBSUB

TEMP3
 INPUT TISUB
 OUTPUT TISUB

TEMP4
 INPUT TISUB
 OUTPUT TISUB

TEMP5
 INPUT TISUB
 OUTPUT TISUB

TEMP6
 INPUT AISUB TISUB SETPH
 OUTPUT AISUB TISUB SETPH

TEM1
 INPUT ENDCSB
 OUTPUT ENDCSB

TEM2
 INPUT ENDCSB
 OUTPUT ENDCSB

TEM3
 INPUT ENDCSB
 OUTPUT ENDCSB

TEM4
 INPUT ENDCSB
 OUTPUT ENDCSB

TEM5
 INPUT ENDCSB
 OUTPUT ENDCSB

TERM
 OUTPUT IBHOUT PRT7

SRD-111D PERFORMANCE PREDICTION PROGRAM

TERM1

INPUT NSCE
OUTPUT NSCE

TERM2

INPUT NSCE
OUTPUT NSCE

TERN

INPUT PRY7
OUTPUT PRY7

TEST

INPUT TISUB
OUTPUT TISUB

TE1

INPUT SLOT AIBST
OUTPUT SLOT AIBST

TE2

INPUT SLOT
OUTPUT SLOT AIBST

TGRAIN

OUTPUT PRY7

THE

INPUT RBSUB
OUTPUT RBSUB

THETA

IN BLK029 COMMON IN MNCHN4 PARTBN SEGSUB
INPUT PARTBN SEGSUB
OUTPUT SEGSUB

THETEX

IN PARMAN COMMON IN IBM INPT MNCHN1 NSCE
INPUT NSCE INPT
OUTPUT NSCE IBM

THOLD

IN DUMYP COMMON IN IBM MNCHN4 PARTBN SEGSUB
INPUT SEGSUB
OUTPUT SEGSUB

SRB-1110 PERFORMANCE PREDICTION PROGRAM

TIMAKR

IN INPUT COMMON IN IBM INPT MNCHN4 RBSTSB RB5UB
 INPUT INPT
 RBVSUB SEGSUB

TIMAX

IN INPUT COMMON IN IBM INPT MNCHN4
 INPUT INPT MNCHN4
 OUTPUT IBM

TIMCK1

IN DUMYG COMMON IN CONV MNCHN4
 OUTPUT CONV MNCHN4

TIMCK2

IN DUMYL COMMON IN MNCHN4 RBSTSB
 INPUT RBSTSB
 OUTPUT RBSTSB MNCHN4

TIME

IN PARMF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
 INERT MNCHN4 MODTSB NSCE PARTBN
 PRT7 RBSTSB RMSUB SEGSUB SETPH
 SLOT SUBSON TISUB
 INPUT INERT RBSTSB AIBSUB CONV IBMOUT MODTSB NSCE
 SLOT PRT7 TISUB AIBST MNCHN4 SETPH SEGSUB
 OUTPUT IBMOUT PRT7 TISUB MNCHN4 PARTBN

TIMEAC

IN INPUT COMMON IN AIBST IBM INPT
 INPUT INPT AIBST

TIMECK

IN DUMYC COMMON IN AIBST MNCHN4
 INPUT AIBST
 OUTPUT AIBST

TIMECH

IN INPUT COMMON IN IBM INPT MNCHN4
 INPUT INPT MNCHN4

TIMEDT

IN INPUTJ COMMON IN IBM INPT MODTSB RB5UB
 INPUT MODTSB INPT

SRB-111D PERFORMANCE PREDICTION PROGRAM

TIMEPA

IN INPUT COMMON IN IBM INPT MNCHN4
INPUT INPT MNCHN4

TIMEPH

IN INPUT COMMON IN CONV IBM INPT MNCHN4 RBSTSB
INPUT RBSTSB INPT SEGSUB SETPH MNCHN4 SETPH

TIMEPS

IN INPUT COMMON IN AIBST IBM INPT
INPUT INPT AIBST

TIMEW

IN COMA COMMON IN AIBST AIBSUB IBM IBMOUT INERT
MNCHN1 MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSTSB RASUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT SETPH
OUTPUT SETPH

TIMEZ

INPUT INERT

TIMEZ

IN DUMY1 COMMON IN NSCE
INPUT NSCE
OUTPUT NSCE

TIMEZZ

IN BLK033 COMMON IN INPT SETPH
INPUT SETPH
OUTPUT SETPH

TIMEPT1

IN INPUT COMMON IN IBM INPT TISUB
INPUT INPT TISUB
OUTPUT IBM

TIMEPT2

IN INPUT COMMON IN IBM INPT TISUB
INPUT INPT TISUB
OUTPUT IBM

SRB-111D PERFORMANCE PREDICTION PROGRAM

YISP

OUTPUT PRT7

TITLE

INPUT INPUT
OUTPUT INPUT

TMA

IN PARMAS COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

TMB

INPUT NSCE
OUTPUT NSCE

TMHD

INPUT LOOKUP
OUTPUT LOOKUP

TMH

INPUT LOOKUP
OUTPUT LOOKUP

TO

IN PARMAS COMMON IN AIBST AIBSUB INPT MNCHN4 NSCE
INPUT RBSTSB AIBSUB SUBSON NSCE SETPH SLOT SUBSON
MNCHN4 SETPH SEGSUB
OUTPUT MNCHN4

TOFLAG

IN PARMAS COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPUT INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PARTON PRT7 RBSUB SEGSUB
SETPH SLOT SUBSON TISUB
INPUT RBSTSB
OUTPUT IBM MNCHN4 SEGSUB

TOP

INPUT LESSQ
OUTPUT LESSQ

SRB-111D PERFORMANCE PREDICTION PROGRAM

TOPZ

INPUT LESSQ
OUTPUT LESSQ

TOTEMP

INPUT MNCHN4
OUTPUT MNCHN4

TPR

IN COMS COMMON IN MNCHN4 RBSTSB RBSUB
INPUT RBSTSB
OUTPUT MNCHN4

TRSUB

IN PARHAG COMMON IN INPT MNCHN1 NSCE
INPUT NSCE INPT MNCHN1

TS

INPUT SLOT AIBST PARTBN
OUTPUT SLOT AIBST PARTBN

ISA

IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
INPUT SLOT
OUTPUT IBMOUT SLOT

TSVHI

INPUT PARTBN
OUTPUT PARTBN

TSVH

INPUT PARTBN
OUTPUT PARTBN

TSF

IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
INPUT SLOT
OUTPUT IBMOUT SLOT IBM

TSLOTA

IN COMK COMMON IN IBM IBMOUT SEGSUB SLOT TISUB
INPUT IBMOUT SLOT
OUTPUT IBMOUT IBM TISUB SEGSUB

SRB-111D PERFORMANCE PREDICTION PROGRAM

TSLOTF

IN COMK COMMON IN IBM IBMOUT SEG SUB SLOTF TISUB
 INPUT IBMOUT SLOTF
 OUTPUT IBMOUT IBM TISUB SEG SUB

TSS

INPUT SEYPH
 OUTPUT SEYPH

TST

IN INPUT COMMON IN IBM INPT TISUB
 INPUT INPT TISUB
 OUTPUT IBM

TTMP

IN DUMYD COMMON IN AIBSUB NSCE
 INPUT AIBSUB NSCE
 OUTPUT AIBSUB NSCE

TX

INPUT SEYPH
 OUTPUT SEYPH

TXSUB

IN PARMAG COMMON IN INPT MNCHN1 NSCE
 INPUT INPT MNCHN1

TX1

INPUT SLOTF AIBST
 OUTPUT SLOTF AIBST

TX2

INPUT SLOTF AIBST
 OUTPUT SLOTF AIBST

TY1

INPUT SLOTF AIBST
 OUTPUT SLOTF AIBST

TY2

OUTPUT SLOTF AIBST

T1A

INPUT NSCE
 OUTPUT NSCE

SRQ-1110 PERFORMANCE PREDICTION PROGRAM

TIB

IN PARMAL COMMON IN MNCHN4 NSCE
 INPUT NSCE MNCHN4
 OUTPUT NSCE

TIBC

INPUT NSCE
 OUTPUT NSCE

TIBG

INPUT NSCE
 OUTPUT NSCE

TIBQ

INPUT NSCE
 OUTPUT NSCE

U

IN PARMF COMMON IN AIBST AIBSUB CONV IBM IBMOUT
 INERT MNCHN4 MODT5B NSCE PARTBN
 PRT7 RBST5B RB SUB SEG SUB SETPH
 SLOT SUBSON TISUB
 INPUT AIBSUB NSCE SLOT RB SUB AIBST MNCHN4 SEG SUB
 OUTPUT AIBSUB NSCE SLOT AIBST MNCHN4

UA

IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
 OUTPUT IBMOUT SLOT MNCHN1

UBETA

INPUT SUBSON NSCE
 OUTPUT SUBSON NSCE

UCH

INPUT RB SUB
 OUTPUT RB SUB

UF

IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
 OUTPUT IBMOUT SLOT IBM

UMA

INPUT SUBSON NSCE
 OUTPUT SUBSON NSCE

SAB-IIID PERFORMANCE PREDICTION PROGRAM

URAX

INPUT SLOT AIBST
OUTPUT SLOT AIBST

UMB

INPUT NSCE
OUTPUT NSCE

UR

INPUT PARTBN
OUTPUT PARTBN

UT

IN COMA COMMON IN AIBST AIBSUB IBM IMMOUT INERT
MNCHN1 MNCHN4 MODTSB NSCE PARTBN
PRT7 RBSTSB RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT AIBSUB
OUTPUT MNCHN4

UTMP

INPUT SLOT AIBST MNCHN4
OUTPUT SLOT AIBST MNCHN4

UTNP

IN DUMYD COMMON IN AIBSUB NSCE
INPUT AIBSUB NSCE SLOT AIBST MNCHN4
OUTPUT AIBSUB NSCE SLOT AIBST MNCHN4

UTNPT

INPUT AIBST

UIA

IN PARMAX COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

UIB

IN PARMAX COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE MNCHN4
OUTPUT NSCE

SRB-111D PERFORMANCE PREDICTION PROGRAM

V
IN COMH COMMON IN AIBST MNCHN1 MNCHN4
INPUT SLOT AIBST MNCHN4
OUTPUT SLOT AIBST MNCHN1

V
INPUT SLOT
OUTPUT SLOT

YCE
IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT ENDCSB
OUTPUT ENDCSB

VCH
IN WORKRH COMMON IN INPT MNCHN1 MNCHN4 RBSTSB SETPH
INPUT RBSTSB MNCHN4 SETPH
OUTPUT MNCHN1

YCHINP
IN INPUTH COMMON IN IBM INPT MNCHN1 MNCHN4
INPUT INPT MNCHN1 MNCHN4
OUTPUT IBM

VCK
IN WORKRN COMMON IN AIBST IBM INPT MNCHN1 MNCHN4
RBSTSB SETPH
INPUT RBSTSB AIBST MNCHN4 SETPH
OUTPUT MNCHN1

VCNA
IN PARMAI COMMON IN ENDCSB LOOKUP MNCHN1 MNCHN4 NSCE
INPUT ENDCSB NSCE
OUTPUT ENDCSB MNCHN1

VCNB
IN PARMAI COMMON IN ENDCSB LOOKUP MNCHN1 MNCHN4 NSCE
INPUT NSCE
OUTPUT ENDCSB MNCHN1

VCNIRA
IN INPUTV COMMON IN INPT MNCHN1 MNCHN4
INPUT INPT MNCHN1

SRB-1110 PERFORMANCE PREDICTION PROGRAM

VCHNB

IN INPUT COMMON IN INPT MNCHN1 MNCHN4
INPUT INPT MNCHN1

VCHNP

IN INPUT COMMON IN IBM INPT MNCHN1 MNCHN4
INPUT INPT MNCHN1 MNCHN4
OUTPUT IBM

VE

INPUT SETPH
OUTPUT SETPH

VF

IN CORR COMMON IN AIBSV AIBSUB IBMOUT LOOKUP MNCHN1
MNCHN4 NSCE PARTBN PRT7 RBSTSB
RBSUB SEGSUB SETPH SLOT TISUB
INPUT IBMOUT PRT7 MNCHN4 SEGSUB
OUTPUT PRT7 MNCHN4 SEGSUB

VFCYL

IN CORR COMMON IN IBMOUT PRT7
INPUT IBMOUT PRT7
OUTPUT IBMOUT PRT7

VFEO

IN WORKRE COMMON IN ENDCSB MNCHN1
INPUT MNCHN1
OUTPUT ENDCSB

VFM

IN PARMG COMMON IN AIBST IBMOUT LOOKUP MNCHN4 PRT7
RBSTSB SETPH TISUB
INPUT RBSTSB IBMOUT PRT7 MNCHN4 SETPH
OUTPUT PRT7 MNCHN4

VFHO

IN WORKRR COMMON IN INPT MNCHN1 MNCHN4 RBSTSB SETPH
INPUT INPT MNCHN1 MNCHN4
OUTPUT MNCHN1

VFMPR

INPUT MNCHN4
OUTPUT MNCHN4

SMB-IIID PERFORMANCE PREDICTION PROGRAM

VFI

INPUT SEGSUB
OUTPUT SEGSUB

VFIN

IN PARMG COMMON IN AIBST IBMOUT LOOKUP MNCHN4 PRT7
RBSTSB SETPH TISUB
INPUT SEVPH
OUTPUT SEVPH

VFN

IN PARMG COMMON IN AIBST IBMOUT LOOKUP MNCHN4 PRT7
RBSTSB SETPH TISUB
INPUT RBSTSB IBMOUT PRT7 AIBST MNCHN4 SETPH
OUTPUT PRT7 MNCHN4

VFNA

IN PARMG COMMON IN ENDCSB LOOKUP MNCHN1 MNCHN4 NSCE
INPUT NSCE MNCHN4
OUTPUT MNCHN4

VFNB

IN PARMG COMMON IN ENDCSB LOOKUP MNCHN1 MNCHN4 NSCE
INPUT NSCE MNCHN4
OUTPUT MNCHN4

VFNO

IN WORKRN COMMON IN AIBST IBM INPT MNCHN1 MNCHN4
RBSTSB SETPH
INPUT INPT MNCHN1 MNCHN4
OUTPUT IBM

VFNOA

IN INPUTV COMMON IN INPT MNCHN1 MNCHN4
INPUT INPT MNCHN4

VFNOD

IN INPUTV COMMON IN INPT MNCHN1 MNCHN4
INPUT INPT MNCHN4

VFPP

IN COMM COMMON IN MNCHN4 MODTSB PARTBN SEGSUB SETPH
TISUB
INPUT SEVPH
OUTPUT SEVPH

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SRB-1110 PERFORMANCE PREDICTION PROGRAM

VFAEB

IN PARMK COMMON IN AIBST CONV IBM IBHOUT MNCHN4
PRT7 SETPH
OUTPUT SETPH

VGA

IN PARMK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

VGAZ

IN PARMK COMMON IN MNCHN4 NSCE PRT7 SUBSON
INPUT SUBSON NSCE
OUTPUT NSCE

VGB

IN DUMYX COMMON IN NSCE
INPUT NSCE
OUTPUT NSCE

VGBZ

IN DUMYX COMMON IN NSCE
INPUT NSCE
OUTPUT NSCE

VIS

IN PARMK COMMON IN AIBST IBHOUT LOOKUP MNCHN4 PRT7
RBSTSB SETPH TISUB
OUTPUT SETPH

VNOZSB

IN PARMK COMMON IN IBM INPT MNCHN1 NSCE
INPUT NSCE MNCHN1
OUTPUT IBM MNCHN1

VOLUME

INPUT RBSTSB
OUTPUT RBSTSB

VP

IN CONG COMMON IN AIBST AIBSUB IBHOUT LOOKUP MNCHN1
MNCHN4 NSCE PARTBN PRT7 RBSTSB
RBSTSB SEG SUB SETPH SLOT TISUB
INPUT RBSTSB PRT7 SEG SUB
OUTPUT PRT7 MNCHN4 SEG SUB

SUB-1110 PERFORMANCE PREDICTION PROGRAM

VPH

IN PARM1 COMMON IN IBHOUT MNCHN4 PRT7
INPUT PRT7 MNCHN4
OUTPUT PRT7 MNCHN4

VPN

IN PARM1 COMMON IN IBHOUT MNCHN4 PRT7
INPUT PRT7
OUTPUT PRT7 MNCHN4

VPR

IN COMH COMMON IN AIBST MNCHN1 MNCHN4
INPUT AIBST
OUTPUT AIBST MNCHN1 MNCHN4

VPT

INPUT SEGSUB
OUTPUT SEGSUB

YT

IN COMAIB COMMON IN AIBST SEGSUB
INPUT AIBST SEGSUB
OUTPUT SEGSUB

YT1

INPUT SEGSUB
OUTPUT SEGSUB

YT2

INPUT SEGSUB
OUTPUT SEGSUB

YT3

INPUT SEGSUB
OUTPUT SEGSUB

WD

IN PARMK COMMON IN AIBST CONV IBH IBHOUT MNCHN4
PRT7 SETPH
INPUT CONV SETPH
OUTPUT CONV AIBST SETPH

SRB-1110 PERFORMANCE PREDICTION PROGRAM

KDB

IN DUMYQ COMMON IN CONV SETPH
INPUT CONV SETPH
OUTPUT CONV SETPH

KDOT

IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PARTON PRT7 RBSUB SEGSUB
SETPH SLOT SUBSON TISUB
INPUT AIBSUB CONV SUBSON MODTSB NSCE SLOT PRT7
AIBST MNCHN4 SETPH SEGSUB
OUTPUT AIBSUB CONV NSCE SLOT PRT7 AIBST MNCHN4
SETPH

KDOTD

IN PARMB COMMON IN AIBST AIBSUB CONV IBM IBMOUT
INPT LOOKUP MNCHN1 MNCHN4 MODTSB
NSCE PARTON PRT7 RBSUB SEGSUB
SETPH SLOT SUBSON TISUB
INPUT SLOT AIBST MNCHN4
OUTPUT SLOT AIBST MNCHN4

KDOTI

IN COMA COMMON IN AIBST AIBSUB IBM IBMOUT INERT
MNCHN1 MNCHN4 MODTSB NSCE PARTON
PRT7 RBSUB SEGSUB SETPH
SLOT SUBSON TISUB
INPUT AIBSUB AIBST
OUTPUT AIBSUB AIBST

KDOTSD

INPUT SLOT
OUTPUT SLOT

KDOTSI

INPUT SLOT
OUTPUT SLOT

KDOTX

INPUT SETPH
OUTPUT SETPH

SRB-111D PERFORMANCE PREDICTION PROGRAM

NDT

INPUT PR7
OUTPUT PR7

RF

IN PARMV COMMON IN IBMOUT INERT PRT7 SETPH
INPUT INERT IBMOUT PRT7 SETPH
OUTPUT PR7 SETPH

WFACT

IN INPUTR COMMON IN IBM INPT SETPH
INPUT INPT SETPH
OUTPUT IBM SETPH

WFCOR

IN BLK033 COMMON IN INPT SETPH
INPUT INPT SETPH

WFI

IN PARMX COMMON IN PRT7 SETPH
INPUT PR7
OUTPUT SETPH

WFTOL

IN INPUTR COMMON IN IBM INPT SETPH
INPUT INPT SETPH

WGPORT

IN PARMR COMMON IN SEGSUB SETPH
INPUT SETPH SEGSUB
OUTPUT SEGSUB

WGTOT

IN PARMK COMMON IN A185T CONV IBM IBMOUT MNCHN4
PRT7 SETPH
INPUT PR7
OUTPUT PR7 SETPH

WRD13

OUTPUT PR7

WRD4

OUTPUT PR7

SRB-IIID PERFORMANCE PREDICTION PROGRAM

NSLOT0
 IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
 OUTPUT IBMOUT SLOT MNCHN1

NSLOT1
 IN COMJ COMMON IN IBM IBMOUT MNCHN1 SLOT TISUB
 OUTPUT IBMOUT SLOT MNCHN1

X
 INPUT LESSQ INPT XLIN
 OUTPUT LESSQ INPT XLIN

XBAR1H
 IN COMJ COMMON IN ENDCSB IBMOUT MNCHN1 MNCHN4 PRT7
 INPUT IBMOUT
 OUTPUT IBMOUT PRT7
 SEGSUB SLOT TISUB

XBH
 IN COMJ COMMON IN IBMOUT LOOKUP MNCHN4 NODTSB PRT7
 INPUT IBMOUT
 OUTPUT IBMOUT
 SETPH

XBN
 IN COMJ COMMON IN IBMOUT LOOKUP MNCHN4 NODTSB PRT7
 INPUT IBMOUT
 OUTPUT IBMOUT LOOKUP
 SETPH

XBNA
 OUTPUT LOOKUP

XCGHD
 INPUT INPT

XCGH
 INPUT INPT

XMBAR
 INPUT AISUB SLOT
 OUTPUT AISUB SLOT

SMB-1110 PERFORMANCE PREDICTION PROGRAM

XP

INPUT MNCHN4
OUTPUT MNCHN4

X1

INPUT MNCHN4
OUTPUT MNCHN4

X2

INPUT MNCHN4
OUTPUT MNCHN4

Y

OUTPUT XLIN

Y1

OUTPUT MNCHN4

ZCALC

IN COMA		COMMON IN		AIBST	AIBSUB	IBM	IBMOUT	INERT
				MNCHN4	MNCHN4	MQDT5B	NSCE	PARTBN
				PRY7	RBST5B	RASUB	SEGSUB	SETPH
				SLOT	SUBSON	TISUB		
INPUT	IDMOUT	SLOT	TISUB		MNCHN1	MNCHN4	SETPH	PARTBN
	SEASUB							
OUTPUT	IDMOUT	MNCHN1	PARTBN	SEGSUB				

ZEROBY

INPUT SLOT PRY7 AIBST MNCHN4